BOND RATINGS

AS AN

INVESTMENT GUIDE

AN APPRAISAL OF THEIR EFFECTIVENESS

By

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TO MY LATE FATHER,

FIRST AMONG MY PRECEPTORS

IN THE FIELD OF INVESTMENT

PREFACE

Bond ratings are symbols of investment quality assigned to specific bonds by certain statistical organizations. Indeed, the use of these ratings is so widespread and so important to millions of investors that the ratings are an established institution in the bond market. Hardly a bond is purchased anywhere in the United States but that the purchaser asks, "How is it rated?"

It would not be unnatural, however, for a man who is buying an "A" bond to wonder whether the "A" had been properly assigned, and whether experience had borne out the rating agencies' ability to rate. Just as many stock market speculators have inquired whether the advisory services have shown a respectable "batting average," bond buyers might reasonably ask whether bond ratings have proved to be worth the bother. Do bond ratings, in other words, forecast the market?

Since the early '30's bond investors have become increasingly ratings-minded. Bankers especially are interested in the matter, for the Comptroller of the Currency on February 15, 1936, issued a ruling (as further defined and interpreted in his ruling of October 27, 1936) having a direct bearing on the use of bond ratings. It is common knowledge in bond circles that since the issuance of the Comptroller's ruling, a bond rated below that of a "business man's investment" (BBB, Baa, B**, or B1+) can almost never be sold to a bank. Bond houses, therefore, are not out of order when they raise the question, "How good is the rating?"

This book is intended to serve the purpose of answering these questions and to show how the ratings may be used with a greater degree of safety. It also sets forth a practical plan for obtaining as high a return as possible consistent with the apparent quality of individual bonds.

Since the author has worked entirely as an individual, subsidized by no person, group of persons, corporation, or organi-

zation of any kind whatsoever, he alone is responsible for any statements that may appear to be critical.

The author is especially indebted, however, to Professors Hastings Lyon and David L. Dodd, both of Columbia University, for many valuable suggestions and for a very careful reading of the manuscript.

GILBERT HAROLD

Norman, Oklahoma,
February, 1938.

CONTENTS

TABLES

APPENDIX TABLES

BOND RATINGS AS AN INVESTMENT GUIDE

CHAPTER 1

PURPOSE OF THE STUDY

Bond ratings have become an institution in the American field of investment. Nearly every commercial bank, investment bank, insurance company, investment trust, and investing trustee from the Atlantic to the Pacific, from Canada to Mexico, consults them. Constant users of the ratings are found among countless individual investors, traders, and bond brokers. It is, indeed, no exaggeration to say that bond ratings are as much an institution in the investment field as commercial credit ratings are in the field of mercantile credit. Bond ratings constitute the most important single phase of bond selection to most of their innumerable followers.

Since the ratings have achieved such importance, this inquiry is directed to the reasons for their development and use, their effects, and their efficacy.

Genesis and Development of the Rating System.—Specifically, one may ask, with reference to the first part of the inquiry: What psychological factors have contributed to the growth of the bond rating system? What economic factors have accelerated and strengthened its development? What other elements have entered into its establishment and its growth?

Effects of the Rating System.—Continuing, with reference to the second part of the inquiry: What effects does the rating system have on the bond market? On bond holders? On investment practice? On corporate obligors? On investment banking? On the profession of investment counsel? On corporate publicity?

Efficacy of the Rating System.—The third part of the inquiry is somewhat more complex. Omitting details, how-

ever, a summarization of important questions would include the following:

1. Have bond ratings protected the investor against relative decline in market value in a falling bond market?
2. Is it true, as is generally understood, that yields vary inversely with ratings?
3. Do defaults occur in low-rating bonds more than in high-rating bonds?
4. Has there been any relationship between rating changes and relative changes in market value, yields, and defaults?

The Future.—Based upon the findings of this study, what recommendations, if any, should be made in connection with the operation and use of the rating system by the rating organizations, by banks, other institutions, individual investors, and by governmental agencies?

This study, therefore, is undertaken to ascertain what the rating system purports to do, how well it does it, and whether experience points to any desirable improvements.[1]

[1] For an earlier treatment of this subject see three articles by the present author as follows:

(a) "Bond Ratings: An Institution," in *Barron's*, Vol. XIV, No. 51 (December 17, 1934), pp. 5ff.

(b) "Do Bond Ratings Forecast the Market?" in *Barron's*, Vol. XIV, No. 53 (December 31, 1934), pp. 7ff.

(c) "Bond Ratings Before the Jury," in *Barron's*, Vol. XV, No. 8 (February 25, 1935), pp. 5ff.

CHAPTER 2

HISTORY OF THE RATING SYSTEM

Nature of Rating.—All mentally competent individuals are engaged in an almost continual course of judging, of weighing, of rating. The choice of food, of clothing, and of activity are made chiefly as the result of judgments. So are the reactions from the personalities of other beings; from the shape, color, and texture of materials. All stimuli coming to the attention of the individual are being judged, either consciously or subconsciously, as good, bad, or indifferent. Such is the essential nature of rating.

When this process is consciously applied to specific spheres for particular purposes, the resulting judgments take various forms of expression. It is hardly sufficient to say that a thing is "good" or is "bad," for the dividing line between these vague descriptions is indefinite. There are various degrees of goodness and of badness, their number depending on the qualities of the subject; and their recognition on the fineness of the discriminatory powers of the judges. "Good" changes to "bad" through all the steps from "best" to "worst." It is for the purpose of giving some semblance of precise meaning to such gradations of quality that the system of symbols commonly used in rating has been evolved.

Application of the Process.—The conscious practice of rating is applied to many things. Expression of the process is found, for example, in the railroad industry in which each road is rated or classified according to its capacities and other measures of its importance. In the field of education likewise, there are standard schools, sub-standard and above-standard schools, as well as Class A universities and collegiate institutions of lower gradations. Some authors in the marketing field have attempted to set up scales for rating the quali-

ties of salesmen.[1] Wheat and other commodities traded on the organized exchanges are graded according to more or less exacting standards set up by custom, by agreement, and by law. For the guidance of the consumer, many kinds of advertised competing products are rated on the basis of comparative worth.[2] Similarly, the credit of business men is rated according to certain principles. The investment quality of securities is rated in like manner.

Forms of Ratings.—Such practices are given expression in the form of alphabetical letters or of numerals or of both. Only occasionally are other forms, such as asterisks, daggers, plus and minus signs used. It is common practice to allot the letter A or the number 1 to the highest grade. In other cases the two types of symbols are combined, A1 signifying a high, if not the highest, grade.

Another type of rating, applied to securities, is obtained by a form of ranking. Thus a group of, let us say, a dozen securities, are rated or ranked according to their relative positions with reference to certain criteria. In one case observed, these criteria were the dividends, the net earnings, and the book value. Each of the ratings or rankings assigned to each of these criteria is then given a weight and by the process of simple multiplication the rater obtains a total score. The security having the highest total score is given first rank, the one having the lowest total score is given lowest rank, and so on. Applied to a group of eleven mining stocks, this system recently assigned first place to United States Smelting and last place to Anaconda Copper. This plan was said to represent an "acid test for the investor." [3]

Immediate Predecessors.—Commercial credit ratings, the nearest relatives of security ratings, came into being in the middle of the nineteenth century. They have been in wide use ever since, and they occupy a position in the mercantile field

[1] For example, see J. George Frederick, *Modern Salesmanagement* (D. Appleton-Century Co., Inc., New York: 1920), pp. 128-129.

[2] Consumer's Research, Inc. publishes ratings of consumer commodities, such as soap, foods, automobiles. Specific brands are rated as to both quality and price. See the bulletins of Consumer's Research, Inc., Washington, N. J.

[3] Howard Florance, "Analyzing the Mining Companies," in the *Review of Reviews*, May, 1935, p. 51.

similar to that of security ratings in the investment field. Indeed, credit ratings and bond ratings are very closely akin, historically and in nature, although bond rating agencies are quick to disclaim any "credit" evaluation in their ranking of securities.[4] The growth of the mercantile credit agencies established the precedent of commercially valuable ratings and developed the method of their distribution. A brief survey of their rise is, therefore, essential here for its bearing upon the development of security rating.

The most important immediate factor in the creation of commercial credit ratings was the financial crisis of 1837.

> With the passing of the clouds, merchants throughout the country began to realize that one of the chief contributory causes of the crash and the depression which followed was inherent in the conditions which governed credit granting in this country. . . . Thus the crisis of 1837 brought the merchants face to face with the necessity of clearer and more thorough scrutiny of credit risks. The eagerness with which information was sought by sellers of goods on time finally resulted in the establishment of the mercantile agency.[5]

The mercantile agency did not exist before that time.[6]

A New York merchant, Lewis Tappan, had been conducting, with his brother, a wholesale and retail silk business under the name of Arthur Tappan and Company. Credit-minded, Lewis Tappan had compiled valuable credit information about his customers and prospective customers, who apparently were many in number and of commercial importance, for when the house of Tappan failed in the crisis the credit records, which Lewis Tappan had wisely preserved, were in great demand. Tappan, who seems to have been a man of business acumen, decided to capitalize his well-known records and to extend and elaborate them for the purpose of selling them to the business world.

With this in mind, Tappan formed in 1841 in New York the first mercantile credit agency designed solely for that purpose. It did business under the name "The Mercantile

[4] See, for example, Moody's *Manual of Industrials*, 1931, p. viii.
[5] Theodore N. Beckman, *Credits and Collections in Theory and Practice* (McGraw-Hill Book Co., Inc., New York: 1930), p. 135.
[6] James E. Hagerty, *Mercantile Credit* (Henry Holt & Co., Inc., New York: 1913), p. 134.

Agency." His brother, Arthur, became associated with him in this new business either at that time or shortly thereafter, and in 1845 Benjamin Douglas joined the organization. Douglas was admitted as a partner in 1847, at which time the firm name was changed to Lewis Tappan and Company. In 1849, Lewis Tappan resigned from the firm, and the firm name was changed to Tappan and Douglas. By 1854, Douglas had become the sole proprietor, and in that year his brother-in-law, Robert Graham Dun, was admitted to partnership under the new firm name of "B. Douglas and Company." Eventually, in 1859, Douglas withdrew, and Dun, at the age of 32, became the sole proprietor under the name of R. G. Dun and Company, a name which the organization held until 1933. The first issue of the Dun rating book containing about 20,000 names appeared in 1859. In recent years the rating books have carried more than 2,000,000 names.

In the meantime, other organizations have entered the field. A Cincinnati lawyer, John M. Bradstreet, was in charge of an insolvent estate. It became necessary for him in the course of his duties to procure information regarding the credit risks of various mercantile firms in the Cincinnati area. He discovered that this information could be sold to business houses in New York. As an outcome he founded, in 1849, Bradstreet's Improved Commercial Agency. This firm published in 1857 the Bradstreet Rating Book which was the world's first commercial rating book, ante-dating by two years the first such publication by the older Dun organization. In 1876 the Bradstreet organization was incorporated under the name of The Bradstreet Company.

The business of these two competing organizations grew. Parenthetically it is interesting to note that

> In the early days . . . there were no typewriters, no telephones, nor any satisfactory reproduction processes. Reports were written in ledgers by skilled penmen. Subscribers could not send for reports as they do now. If they wanted to see one they had to visit the office . . . in person, call for the ledger, and inspect the report written there.[7]

[7] "The Formation of Dun and Bradstreet, Inc.," *Dun & Bradstreet Weekly Review*, March 4, 1933, p. 3.

Numerous competitors came into being during this period, but were unable to stay in the business. By 1930 the Dun Company had 258 offices throughout the world, and the Bradstreet Company had 192 in addition to those of a number of separate but affiliated companies. So widely distributed, in fact, were the Dun and the Bradstreet offices, so great was their duplication of facilities and personnel, that in 1933 the two organizations were consolidated under the name of Dun and Bradstreet, Inc.[8]

Birth of Security Ratings.—It was in the light of the experience of the commercial credit rating agencies that security ratings were inaugurated more than a half-century later. Certain individuals were so impressed with the wide acceptance of commercial credit ratings that they were finally stirred to the point of action in organizing the first security rating business.

Two young men of the fishing village of Gloucester, Mass., had for years been interested in investment securities, their quotations, and financial statistics. The rapid growth of the market and the glamorous possibilities of financial captaincies gripped their imaginations. Many times they traveled together by rail to Boston, financial center of New England. It was during or before 1901 that these two young men conceived the idea of security ratings. They discussed it on the way to and from Boston and they continued to discuss it for some years. The two young men were Roger Babson and Freeman Putney, Jr.

It was not, however, until 1909 that security ratings were published on a scale large enough to be called to public attention, and it was done neither by Mr. Babson nor Mr. Putney. John Moody in New York had, since the turn of the century, been engaged in the publishing business and specialized in financial information, issuing manuals designed to acquaint readers with the location of railroads, their mileages, the names of their directors and officers, the location of their main offices, and other data of similar character. Moody had

[8] *Ibid.*

gone into this business as the result of a realization of what he considered the dearth of financial information at the time.[9] He had been an investment analyst for a Wall Street firm when, as he relates it:

> Reading an article by Woodlock[10] deprecating the paucity of needed information, one bright morning the thought flashed through my mind: Somebody, sooner or later, will bring out an industrial statistical manual, and when it comes it will be a gold mine. Why not do it myself?[11]

Moody consulted Woodlock in person and was advised that if he had the financial backing he should, by all means, go ahead. On the other hand, Moody reports:

> One old Wall Street buccaneer said to me: "You young pipe dreamer, why throw away your ten years' experience of learning the rules of the game? Why give the public all the facts regarding the corporations for the price of a book? You will be showing them how to play safe and get rich, while you will make nothing yourself. Anyway, if you begin to flaunt too many facts, there won't be much inside knowledge left to work on; you will be spoiling our game. Use your information yourself; don't be a philanthropist. There's no money in it!"[12]

Moody realized, however, that

> One cannot take advantage of inside information without capital. One might sell it, yes. But why not sell it wholesale in a book? There would be more money in it in the long run.[13]

The business was an immediate success. Moody's

> little business baby found its place in the financial world at the psychological moment. . . . We sold out our first edition within three months, and long before the second appeared had piled up enough advance business to insure permanent success. Actually I had struck a gold mine.[14]

It was not long, however, before Moody became involved in financial difficulties, a situation which led to his complete

[9] Poor's Manuals antedated Moody's, but Moody apparently envisioned a wider field than that embraced by Poor at the time.

[10] Moody refers here to Thomas F. Woodlock, then and now, the Editor and Co-publisher of *The Wall Street Journal*.

[11] John Moody, *The Long Road Home* (The Macmillan Co., New York: 1933), p. 90.

[12] *Ibid.*, p. 91.

[13] *Ibid.*

[14] *Ibid.*, p. 94.

insolvency in 1907, and instead of taking the European trip that he had planned for that summer, Moody sought the quiet refuge of a Rhode Island summer resort to think out his problems.

> And so it was that slowly, as he sat there, order took the place of chaos in his mind, hope and confidence of despair. And at last, gloomy, subjective thoughts aside, his objective mind began to plan the journey back to a solvent road; a road of miles and miles, but a road of safety just the same.[15]

It was about this time that Moody decided definitely to publish security ratings, for the first ratings appeared less than two years later, and many months must have been consumed in organizing his method of preparing his ratings for publication.

The idea was not wholly new, though its commercial exploitation in this country was novel. Moody writes:

> I cannot claim much credit for creating the idea, and certainly I think the general use of commercial and credit ratings had something to do with bringing the idea of possible bond ratings to my mind. While no one in this country had attempted such a thing as investment ratings by means of symbols, yet even in those days bonds were classified into groups according to quality and salability, especially by large investment institutions, such as insurance companies. Moreover, there had existed for a considerable time, I think, a bond rating system in Vienna and also, I believe, in Berlin. These foreign systems had been developed by symbols, and the *Austrian Manual of Statistics,* which carried these symbols, was quite well known in Europe, although not at all in this country.[16]

There were other roots as well from which the idea sprang.

> . . . the idea was talked about casually by specialists from time to time. Along about 1903 Mr. Floyd Mundy began to bring out a publication called *The Earning Power of Railroads,* which contained basic railroad operating and financial statistics, for the purpose of showing the true way to judge the investment value of railroad bonds and stocks. He did not, however, carry this plan far enough to include ratings. A few years later, Mr. Carl Snyder brought out a book called *American Railways as Investments,* which also contained elaborate statistics, enabling one to classify railroad bonds and stocks

[15] *Ibid.*, p. 150.
[16] John Moody, in a letter to the present writer, dated August 21, 1934.

from an investment angle. This book was written in 1906 and brought out in 1907. I knew Mr. Snyder well, and in those days we had many talks regarding methods for properly appraising railroad investments, and I recall that he expressed his desire to some day make the attempt to put a rating on railroad stocks, such rating to be based primarily on the earning power back of such equities.

However, Mr. Snyder was not interested in the bond market end of railroad investments, and I do not think that he had any idea of trying to rate bonds, but conversations with men like him, and investigations into the basic facts back of railroad securities, brought to my mind more and more the idea of attempting some sort of scheme to classify railroad securities according to their value and marketability. Especially did this seem to be a growing need because of my own experience with the users of Moody's Manual. . . . So many of the manual users were constantly asking for opinions on values that as early as 1906 I worked out a tentative scheme for bringing out a book analyzing railroad bonds and stocks.[17]

As stated by Moody himself, the plan to rate railroad bonds

. . . was greeted with much doubt and ridicule among investment dealers at that time. I was often asked how I had the temerity to pass judgment on all the railroad bonds in the country, when the best that the greatest experts could hope to do in one lifetime would be to intelligently analyze the bond issues of one or two railroad systems. My only reply was that the difference between me and all other people was that I *did* attempt it while they did not.[18]

Naturally, Moody expected the ratings to be well received by investors. He had no specific reasons for thinking so, but "he had the hunch, and it was a strong one," and his hunch proved to have been justified.

Security ratings, therefore, were first published in Moody's *Analyses of Railroad Investments* in 1909. The ratings applied to both stocks and bonds, and the head of the "rating department" was John Moody. Not until 1922, however, was a formal rating department created. At that time, W. Barrett Brown was made its manager, and, excepting the years 1929-30, he has acted in that capacity ever since.

Competition.—Poor's Publishing Company was the second to go into the business of publishing security ratings. By this

[17] *Ibid.*
[18] *Ibid.*

time Freeman Putney, Jr. had become affiliated with Poor, and Moody's success with the ratings undoubtedly spurred him to reconsider the idea that he and Roger Babson and, later, another young man, Roy Ward Porter, had discussed at length more than a decade earlier. They would have ventured into it sooner, in fact, had it not been for the attitude which the professional element in "Wall Street" took to the ratings during Moody's early years. Putney, having been most interested in this phase of the business, was placed in charge of the ratings. That was in 1916. Both stocks and bonds were rated. Putney continued in charge for many years almost single-handed; afterwards he worked a younger man, Robert G. Bolles, into the job of rating, and the latter is now in charge of that phase of the Poor organization's activities.

Third in the field of security ratings was Standard Statistics Company, Inc., which entered the competition in 1922. Luther L. Blake and Harold G. Parker of that organization saw that Standard, with its experience and facilities in financial statistics, could, with little or no extension of its facilities, interpret these data and condense their language into a symbol or rating. Harold G. Parker, assisted by R. S. Dana, was placed in charge of the rating department. He was finally succeeded by Dana, who, in turn, was assisted by Louis Brand. In recent years, however, these men have been succeeded by Dominic G. Di Palma, who worked into rating through the side door of financial investigations of fraudulent or otherwise irregular propositions for the *New York Globe*, and later for Standard Statistics. Di Palma is the present head of the rating department.

The fourth entrant into the field of security ratings was the Fitch Publishing Company, an outgrowth of Francis Emory Fitch, Inc., publishers of security quotations. The president of both organizations is John K. Fitch, son of the founder. Three of the officers of the Fitch Publishing Company, namely John K. Fitch (President), Henry P. Clancy (Editorial Vice President), and Erling C. Olsen (Executive Vice President) had been considering the inauguration of security ratings as early as 1922. No ratings appeared, however, until 1924 and

they were limited to bonds, although Fitch now includes stock ratings. Clancy was and is in charge of the ratings and is assisted by several associates.

It is of interest that all these organizations were started in New York, financial center of the nation. One of them, Poor's, found it advantageous when Roger Babson was building Babson Park near Wellesley, Mass., to become a neighbor of the Babson Statistical Organization in the Park. The chief reason given for this move of Poor's from New York to Babson Park was the increasing cost of printing in New York. Possibly it was felt also that the supposedly conservative atmosphere of Boston and the quiet of Wellesley were conducive to success in financial publishing.

Only four rating organizations have been treated in the foregoing discussion, Although others are in operation today, none as yet has achieved sufficient importance in point of patronage to warrant inclusion in this study of the rating system.

Attitude of Investors.—Although security ratings were first published on "hunch," they received an immediate welcome by the rank and file of investors. Some traders of the time, especially those who were capable of intelligent analysis themselves, greeted their arrival coldly, perhaps in part because the application of the ratings was regarded as a factor limiting the probable market fluctuation of the rated bonds. The ratings, in other words, acted as brakes on their speculative profits. By and large, however, the ratings were warmly received, especially by commercial banks and many individual investors.

Some institutional investors' analysts have at times arrived, in their own work, at estimates somewhat at variance with the published ratings. Some of these analysts sometimes go to the trouble of calling the agency's attention to the difference in an effort to discover wherein the cause of the disagreement lies. Presumably they are prompted by the psychological value of a confirmation of one's own work, and it is not unlikely that in some instances such correspondence is prompted

by the investor's desire to have the investment standing of an issue to which he is committed raised—a change which would presumably result in a rise in the issue's market value.

Although it is far more likely that investors would more readily complain of an issue's being rated too low rather than too high, cases of the latter are not unknown. It is difficult to assay the motive behind a complaint that an issue is rated too high, but it is not impossible that such a complaint may arise as the result of a competitive situation, wherein the complainor may be acting as an undisclosed agent for a corporation which is a competitor of the company whose issue is allegedly rated too high or for the investment banking firm of the competing corporation.

In general, it is conceded in the rating business that in periods of rising bond markets, ratings are generally considered by investors to be too low, and that in periods of declining markets and especially in the troughs of depression the ratings assigned are regarded as being too high.

Attitude of Corporations.—The publication of security ratings in their early days met with opposition similar to that encountered by commercial credit ratings a half century earlier. In the latter instance, as Haggerty remarks,

> It could not be expected that an institution which encroached upon the personal rights of the individual and pried into the business affairs of merchants would develop without opposition. While many of the jobbers accepted it at once as valuable to them and supported it, others looked upon it as an unnecessary institution, and some agreed with retailers that it was contrary to the spirit of free institutions.[19]

Gradually, however, as the system's roots took hold, and as the advantages to society at large were understood, the hostility of merchants decreased. For

> As soon as the agencies published the standing of business men, it was unnecessary for them to confine their city trade to one or a few merchants. . . . When they became subscribers to the agency they learned what merchants in the city had the best rating, and this influenced them in their selling.[20]

[19] James E. Hagerty, *op. cit.*, p. 139.
[20] *Ibid.*, p. 142.

The development of ratings in the securities field, especially in bonds, was not greatly dissimilar. Corporations were opposed to it, and many of them still are, especially among those whose issues are assigned low or mediocre ratings. Some indeed exert their forces to the point of protesting, through the person of an officer or in writing, to the rating agency. A typical statement by corporate officers is summed up in the challenge, "Send your man around, and we'll show him a few things that will cause you to raise your rating." This attitude is typical especially of some corporations which, directly or indirectly, maintain their own securities distributing organizations. Some corporations indeed have gone so far as to assure the rating agency that if a given rating were raised the corporation or its sponsors "could do something" for the rating agency. On the whole, however, corporations in general have now come to accept security ratings as an inevitable and permanent part of our financial system.

Attitude of Investment Bankers.—In no circles has the attitude toward bond ratings been more hostile than among the investment bankers. Such hostility is, of course, easily understood. For not only does the existence of ratings tend to narrow the price spread between trading points, but it also affects the resale of bonds that have come back to their original sponsors, as well as the original sale of new issues of the same corporation. If the rating is high, sales are easily effected; if low, sales are made only with great difficulty. When the rating is high it is often mentioned in lists of bonds for sale, issued to customers by the bond house. When the rating is low, it is rarely so mentioned.

No complaint is ever made by a bond house that an issue which it is sponsoring is rated too high. Other bond houses, however, owing to the pressure of competition, have been known to make such complaints. So vital are the ratings to investment bankers that extreme steps have been taken in some cases to influence those ratings. It is rumored in Wall Street that one agency unknowingly had on its staff a man who was also on the payroll of one of the investment banking houses,

but that to the credit of the agency concerned the man was dismissed as soon as the agency discovered the connection. In many cases, investment brokers call personally on the rating agencies to complain of ratings which they feel to be too low. One firm with offices throughout the country is reported to have threatened cancellation of all its subscriptions to Standard's service because the firm's salesmen had great difficulty in selling certain bonds owing to Standard's rating. Another firm is reported to have offered options on stock to Moody in return for a more favorable rating. It is not to be inferred that such overtures are typical of the investment banking group; rather they are the exceptions, but they indicate the importance attached to the rating system by some bond houses.

Other Types of Security Ratings.—Although the term "security ratings" is generally understood to refer to ratings of general investment safety, there are other types which should be mentioned in a discussion of this subject. As delineated by the agencies, the kind of ratings under discussion in this study is that which applies to the totality of qualities in specific securities—in the present instance, in bonds. It is obvious, however, that other specific characteristics of securities could be rated separately; indeed, with greater ease than the total of all qualities. This, as a matter of fact, is a procedure which is recommended by Dice, who remarks that the rating agency should give its primary rating based upon safety and that "This rating should be followed by supplementary ratings of other vital elements in the investment situation." [21] Apparently no efforts have been made to follow Dice's suggestion, save in one instance, namely as to marketability.

Marketability ratings, advanced only by Poor, have acquired something of a following. Issued since 1916, excepting the years 1925-1928, these symbols of marketability have come to be valued by investors to whom the ease of disposition is an important consideration. Their publication is based upon the belief that although the total quality rating (to which we shall hereinafter refer as the "quality rating") is inclusive of

[21] Charles A. Dice, *The Stock Market* (McGraw-Hill Book Co., Inc., New York: 1926), p. 598.

the factor of marketability, the investor wishes to be apprised of the marketability element separately. Poor designates its ratings of the ease of disposition as "salability ratings." The principle of rating marketability, as affirmed by Poor, recognizes two criteria: (1) the customary spread between bid and asked prices, and (2) the frequency of published quotations. Thus, in four degrees of fineness and with Arabic numerals for symbols, is the element of relative marketability rated.

A different type of rating is the so-called "market rating" advanced by Standard. It should be emphasized that the rating agencies claim that no attention whatever is paid to the market in assigning quality ratings. Market ratings, therefore, are a development which recognizes not only the investment quality of the bond but the market position of the security as well. Thus the rating "Buy" implies that the bond to which it has been assigned, considering its investment quality, is undervalued in the market and is, therefore, an attractive purchase. Similarly, "Sell" implies that the bond, considering its quality, is overvalued in the market. "Hold" is a rather neutral position which is used in opposition to the debatable theory that when a security is not a "buy" it is a "sell." And "Switch" is a term used to indicate that the rating involves both a specific "sell" and a specific "buy." Obviously, these market ratings are not ratings in the sense in which the term is employed here, but are market recommendations based only in part upon quality ratings and in part upon market position. It does not seem unreasonable to infer that some speculative considerations likewise enter into these advisory efforts.

Still another rating of a sort is to be found in the designation of certain securities as "legal" investments for savings banks and trust funds. Although not ratings, as the word is used in this study, the designation "legal" does have effects in the market somewhat allied to the effects of quality ratings. "Legals" are so designated by the requirements of states, which have severally set up certain criteria as those which every investment security accepted by savings banks and/or trust funds must have. One effect of such designation, for example, is that it must of necessity direct vast sums into the

acquisition of such qualified securities, and it may reasonably be inferred that, were it not for the states' requirements, some of these sums would find their way into other commitments. Nevertheless, many cases are found in which bonds given the highest quality rating obtainable cannot qualify as "legals." This, however, is an entirely understandable circumstance if it is recognized that the investment of the funds entrusted to savings banks and trust funds should involve the consideration of factors which have not entered into the quality rating process or which should be considered separately from the all-inclusive rating. If this is not so, and if the quality ratings are accepted as authoritative indices of total investment quality, it follows that there must be some requirements in the states' dicta which are unnecessary, unfounded, or contradictory to the safe commitment of such funds.

In the chapters which follow, it will be understood that any reference to the ratings or the rating system will apply to total quality ratings exclusively unless otherwise designated.

CHAPTER 3

USE OF THE RATINGS

Commercial Banks.—Since their inauguration as concise judgments of investment quality, bond ratings have been used widely by commercial banks and individual investors. Banks and individuals were the principal subscribers to the ratings when John Moody published his first series, and they are numbered in the thousands in the subscription and correspondence files of all the principal rating agencies today. One banker, nicknamed "Triple-A James" because of his insistence on buying only AAA bonds, is typical of thousands in the banking profession. Commercial banks have always been the largest single group of rating adherents. It is difficult, in fact almost impossible, to discover a bank that does not use bond ratings. Although it is practically impossible to ascertain exactly how intensively the ratings are used by commercial banks, the general rule seems to be that the larger New York City institutions use the ratings merely as a check on their own findings, but the smaller and the "outside" banks are dependent on the ratings almost exclusively as authoritative guides. As stated by one official having jurisdiction over "country" banks, the ratings are "used by banks very freely in placing values on listed securities they own or contemplate purchasing." [1]

As further evidence of the interest of bankers in the ratings as authoritative symbols of quality, it is convenient to refer to the accompanying table, among many others, which has appeared in a bankers' leading periodical.

There is reason to believe further that the business depression of the early thirties was a factor in increasing the reliance placed upon bond ratings by commercial bankers. With

[1] J. S. Love, Superintendent of Banking for the State of Mississippi, in a letter to the present writer, dated August 21, 1934.

QUALITY CHANGE [2]

Ratings	Par Value Purchased	Par Value Sold
AAA	$10,000	
AA	10,000	
A	10,000	
BBB	5,000	$5,000
BB		1,000
B		5,000
CCC		
CC		
C		
DDD		8,000
Totals	$35,000	$19,000

the almost complete absence of new issues, and with commercial loans difficult to make, bankers looked more and more to the existing bond market as a means of putting their unproductive funds to work. Since most new issues are not rated until after they have been distributed, and since practically all widely held existing issues carry ratings by all four agencies, bankers probably relied even more upon the rating system than they had in the years of large new offerings.

Investment Houses.—As the ratings became more widely known, other classes of subscribers were entered in large numbers on the mailing lists. Stock and bond brokers constitute a very large number. It should be understood, of course, that one broker's subscription represents many individual users. In practically all brokerage offices the manuals of one or more rating agencies are freely displayed in the reading room or other places where customers congregate.

The same kind of use is common in the offices of bond houses and in public libraries. The individuals who consult the rating books in the public libraries are legion.

[2] George D. Bushnell, "The Investment Committee Studies Its Results" in the *Rand McNally Bankers Monthly*, Vol. 52, No. 1 (January, 1935), p. 12. The table indicates the manner in which changes were made in the bond portfolio. The ratings used are Fitch's.

Insurance Companies.—Insurance companies, as well as other types of institutional investors, are daily consultants of the ratings. In large offices which have the benefit of extensive investment departments the ratings naturally carry less weight, for it is felt that the company's own analysts have facilities comparable to those of the rating agencies; that the company's own analysts can better appraise the necessary investment factors for the company; and that the likelihood is that the company's analysts' opinions are based upon more recent events. Nevertheless, even in the larger insurance companies, a bond is seldom purchased, unless it be a new issue, without consulting the assigned ratings. This may be due in part to the recognized publicity value of such holdings in an appraisal of reserves. In part also it is due to the very fact of widespread reliance upon the rating system in the purchase of securities. This being so, bonds which are rated and rated high probably have a more ready market than others. It is known, however, that some insurance companies, even with their generally superior staffs and facilities, use the rating system as considerably more than a check on their own analyses.

Trust Companies.—It is also known that trust companies are persistent users of the ratings in their administration of trust funds and that the use of ratings for this purpose is constantly increasing. One individual in close touch with both trust companies and the rating agencies has remarked that, "The average trust should consist of ratings not lower than A. If they run lower than that, one has to do some improving." [3] And as evidence of the force of the ratings in trust company circles, one trust executive who states that "a great deal of reliance is normally placed in the ratings," writes that, "The AAA rating accorded (a certain security) . . . was the only way we were able to 'sell' it to our Trust Investment Committee." [4] Indeed, in some cases, trust companies, acting as trustees under trust fund agreements, are

[3] Edward J. Reilly, until recently Trust Counsel, Moody's Investors Service, and Associate Editor, *Trust Companies*, as told by him to the author.

[4] Dillman A. Rash, Bond Department, The Louisville Trust Company, Louisville, Ky., in a letter to the present author, dated August 21, 1934.

restricted by the terms of the fund to the reinvestment of funds in securities given a stipulated rating or higher.[5] Presumably, the same restriction is sometimes placed upon the reinvestment policies of individual trustees.

Investment Trusts.—Investment trusts, though not ordinarily considered extensive users of the ratings, are known to assign much weight to them in some cases. The public's conception of many investment trusts envisions large and sumptuous offices with many uncanny analysts busily engaged with charts and computations, studying every move of the securities under their supervision. No one pictures these analysts or the executive officers of the trusts as close students of such wholesale and simple analytical verdicts as the ratings. Some fixed trusts, however, do make a practice, in advertising units for sale, of specifying the ratings assigned by one or more rating agencies to the trust's constituent holdings. Typical is a prospectus setting forth a standard offering of North American Bond Trust Certificates and giving, along with other data, the composite rating of each bond in the trust's portfolio.[6]

Investigation also reveals that some trusts have stipulations in their indentures requiring them to make their selection and/or elimination of constituent issues on the basis of ratings. A typical stipulation is that of Distributors Group, Inc. (Trust Shares of America) whose indenture specifies ratings as follows:

Mergers, Etc.—In case any stock held in the unit is, through merger, consolidation, reorganization, etc., exchanged for any other Common stock, and the rating of the stock received is not lower than that of the stock exchanged, full shares (with respect to any Trust Unit) of the stock received will be held. Any fractional shares, securities other than Common stock, or stocks of lower ratings will be sold and the proceeds distributed to Trust Shares certificate holders, unless, in the case of a stock of lower rating, its retention is advised by a majority of three independent investment counsel selected by the Depositor.

[5] John S. Kennedy, Assistant Trust Officer, The International Trust Company, Denver, Colo., in a letter to the present writer, dated August 22, 1934.
[6] Issued by Distributors Group, Inc., New York, November 21, 1932.

Non-Substitution—Elimination—No substitutions may be made in the underlying stocks, except in cases of mergers, consolidations, reorganizations, etc., as provided in the Trust Agreement. Elimination of a stock must be made within 30 days if at any time its rating is reduced below the rating given at the initiation of the trust, unless within 15 days its retention is advised by a majority of three independent investment counsel selected by the Depositor. The stock eliminated must be sold and the proceeds distributed to Trust Certificate holders.[7]

Similar provisions are found in the indentures of Depositors and Distributors Corporation,[8] of First Custodian Shares Corporation,[9] and of Second Custodian Shares Corporation.[10]

More detailed stipulations are made in the agreement and declaration of trust between the United States Shares Corporation and the Chase National Bank of the City of New York, with reference to the common stock trust shares, Series A-1, wherein it is specified that

The following conditions shall govern all reinvestments: Substitutions shall be such that (1) Not more than three (3%) per cent of the total investment in a unit shall by reason of such substitution be at the date thereof in the stock of any one company.

(2) No stock shall be acquired for substitution if it is then rated lower than B in "Moody's Manual of Investments and Security Rating Service."

(3) Not more than ten (10%) per cent of the total investment in a unit shall by reason of such substitution be at the date thereof in stock rated lower than Ba in said *Moody's Manual.*

(4) Not more than fifty (50%) per cent of the total investment in a unit shall by reason of such substitution be at the date thereof in stocks rated lower than Baa in said *Moody's Manual.*

(5) Not less than twenty (20%) per cent of the total investment in a unit shall by reason of such substitution be at the date thereof in stocks rated A or higher in said *Moody's Manual.*

If publication of said *Moody's Manual* shall be discontinued, its successor, or if none, a similar reference and rating service of at least equal standing shall be used in ascertaining the ratings hereinbefore mentioned.[11]

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[7] Poor's *Bank, Government and Municipal* volume, 1932, (including Investment Trust, Real Estate, Mortgage, Finance, and Insurance Companies), p. 1372.
[8] *Ibid.*, p. 1454.
[9] *Ibid.*, p. 1415.
[10] *Ibid.*, p. 1416.
[11] Leland Rex Robinson, *Investment Trust Organization and Management*, Appendix D (The Ronald Press Co., New York: 1929), pp. 557-558.

Restrictions of this kind, while not common to investment trusts at large, are available when sought. It is a case in point that

> One interesting example of this principle is to be found in the Banker's Holding Trust, which requires that 80% of its resources be invested in bonds rated not less than Baa (Moody), and that the 20% balance be invested in high-grade bonds rated not less than Ba, or in stocks of banks or insurance companies or first mortgages on improved real estate.[12]

Individual Investors.—The chief deterrent to individual investors to become subscribers to the ratings is apparently the cost, for, as books go, the rating manuals are high in price though perhaps not when the contents are taken into consideration. Especially is the reluctance of some individual investors to subscribe emphasized by the fact that the rating manuals are ordinarily available to all who wish to use them in almost every town large enough to boast of a bank. In consequence, most individual investors would regard such a subscription as a duplication of facilities and a waste of funds. Only those individual investors whose trading activities require personal facilities go so far as to enter personal subscriptions.

Governmental Agencies.—Governmental and semi-governmental agencies are also users of bond ratings. The Federal Reserve banks, for example, make daily use of the ratings in their examination of the portfolios of member banks. Indeed, in the Federal Reserve Bank of New York, a method was devised by Gustav Osterhus for weighing a bank's entire portfolio in terms of one figure, the basis of computation in this method being the established ratings.[13] This system, which is known as the system of desirability weightings, is used also in a number of the other Federal Reserve banks.

Exactly what control the Federal Reserve banks exercise in this respect, officials of the banks and of the Federal Reserve Board are unwilling to divulge other than to refer the

[12] *Ibid.*, p. 287.

[13] Gustav Osterhus, "Flaw-Tester for Bond Lists" in the *American Bankers Association Journal*, Vol. 29, No. 2 (August, 1931), pp. 68ff.

investigator to the regulations promulgated by the Federal Reserve Board. Examination of such regulations leads the investigator to *Regulation H* on membership, which specifies that

> In passing upon the application [for membership] the Federal Reserve Board will consider especially—(1) the financial condition of the applying bank or trust company and the general character of its management.[14]

Both the financial condition and the general management obviously relate, in part at least, to the bond account.

Among the eighteen conditions of membership in the Federal Reserve System is one which provides that a state bank applying for membership "shall at all times conduct its business and exercise its powers with due regard to the safety of its depositors." [15] Coupled with the rescript that

> Every State bank or trust company while a member of the Federal Reserve System . . . (3) Shall comply at all times with any and all conditions of membership prescribed by the Federal Reserve Board at the time of the admission of such member bank to the Federal Reserve System.[16]

Practically unlimited power is vested in the Board for directing the character of member banks' bond accounts. In order to govern special cases, it is further provided that

> In particular cases it may be desirable to prescribe special conditions not of a general nature to correct unsatisfactory conditions in the particular bank. . . .[17]

The United States Treasury Department, through the office of the Comptroller of the Currency, has likewise adopted the ratings as proper measures of the quality of bond accounts, in this case of the national banks. In a ruling by the Comptroller it is provided that bonds rated BBB (or equivalent in other systems) or higher may be carried at cost, while on defaulted bonds and on bonds of lower ratings fractional write-offs

[14] *Membership of State Banks and Trust Companies*, Regulation H (Federal Reserve Board, Washington: 1930), p. 5.
[15] *Conditions of Membership in the Federal Reserve System* (a mimeographed bulletin) Federal Reserve Board, Washington: 1933), p. 1.
[16] *Membership of State Banks and Trust Companies, op. cit.*, pp. 7-8.
[17] *Conditions of Membership in the Federal Reserve System, op. cit.*, p. 3.

must be taken by the banks.[18] This ruling, applicable to every national bank in the country, received wide attention at the time. Commenting on the ruling, Moody advised its subscribers that

> The new policy of the Comptroller of the Currency with regard to bond depreciation among national banks has been rather fully explained in the press and many banks have been informed of the new ruling by bank examiners. . . .
>
> No charge off of any depreciation in bonds of the U. S. Government, of states, counties, or municipalities thereof or of other bonds which have Moody's rating of "Aaa," "Aa," "A," or "Baa" or corre sponding ratings of certain other organizations will be required. . . .
>
> It will be noted that any one of the several rating services is available for use in the above connection. We mention this because the inference has been made in some cases that the ratings of only one organization are to be used in this way.[19]

The importance attributed to this ruling of the Comptroller of the Currency is indicated by a news report in one of the country's leading financial newspapers, which states that

> It was asserted that state, municipal and government bonds and issues given the four highest ratings by statistical corporations did not have their intrinsic value impaired by market fluctuations.
>
> Comptroller Pole pointed out that he had discussed the policy which his office had adopted with Treasury officials and prominent bankers throughout the country, all of whom agreed that it was sound and within the public interest.[20]

Adoption of the Comptroller's plan is found also in the offices of many state banking superintendents. Indeed it is reported that the plan is really operative in most of the states.

So far as state banking departments are concerned, the following expressions made in letters to the present writer are probably typical of the attitude held in most jurisdictions:

> We depend upon the ratings for our guidance, assuming that they are reliable and honest.[21]

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[18] Mimeographed ruling issued by J. W. Pole, then Comptroller of the Currency, not dated. Other references indicate that this ruling was made on September 11, 1931. See the *Commercial and Financial Chronicle*, Vol. 133, No. 3455 (September 12, 1931), p. 1672.

[19] Moody's *Weekly Bond Letter*, No. 48 (September 21, 1931), p. B-106.

[20] *The Wall Street Journal*, Vol. 98, No. 61 (September 12, 1931), pp. 1, 5.

[21] Frank H. Johnson, Superintendent of Banks for the State of Montana, dated August 22, 1934.

We accept the rating of [the established agencies] as a fair valuation of . . . listed securities and use it as a basis of passing on securities of that nature.[22]

We find these ratings very helpful. . . . We would be very greatly handicapped without information of this character.[23]

In our effort to cooperate with the bankers under our supervision we try to ascertain which rating service they use and then make our appraisal through the same agency.[24]

Some method of grading investment securities is necessary and these well established and generally accepted ratings are therefore used in practice.[25]

A similar adoption is found in the offices of many state superintendents of insurance. In the State of New York, for example, amortization [26] of bonds held by insurance companies is permitted for all bonds of the United States government and subdivisions thereof, of all bonds of the Canadian government and subdivisions thereof, and of all bonds rated Ba (or equivalent in other agencies) or higher.[27] It will be recalled that recognition of bonds as "investment grade" by the United States Comptroller of the Currency (and by most of the state banking Superintendents) goes no lower than the Baa rating.

A somewhat different use is made of the ratings in the State of Arkansas, where comparison of the standing of insurance companies is desired. In Arkansas,

The examiners in making an examination of an insurance company have to refer to [rating] books to give an estimate of the value of the securities; then in checking the various annual reports

[22] J. S. Love, Superintendent of Banks for the State of Mississippi, dated August 21, 1934.

[23] J. H. Williams, Superintendent of Banks for the State of Alabama, dated August 20, 1934.

[24] A. S. Schramm, Superintendent of Banks for the State of Oregon, dated August 22, 1934.

[25] Blake S. Raplee, Division of Banks, State of Ohio, dated August 20, 1934.

[26] Amortization refers here to a method of book valuing bonds from year to year. When a bond is purchased at a premium, the premium may be charged off over a period of years; otherwise, the bond will be redeemed at maturity in an amount less than that at which the bond is carried on the books of the bondholder (unless some other method of adjustment is used). Similarly, if a bond is purchased at a discount, the discount may be accumulated over a period of years, usually to maturity. By pursuing this process in either direction the book value of a bond each year approaches the face value. For a fuller explanation of amortization in this sense, see W. A. Paton, editor, *Accountants' Handbook* (The Ronald Press Co., New York: 1933), pp. 339-352, or Charles N. Hulvey, *The Mathematics of Finance* (The Macmillan Co., New York: 1934), pp. 105-112, or any other standard work on financial mathematics. The effect of the amortization process under the abnormal conditions of 1933-1934 was to carry many bonds at book values substantially higher than market values.

[27] Communication from George S. Van Schaick, Superintendent of Insurance for the State of New York, New York City, "to all insurance companies and societies under the jurisdiction of the New York State Insurance Department," dated December 26, 1933.

filed each year the department uses the [rating] books to arrive at the standing of the various insurance companies.[28]

Thus it is seen that not only are the members of the Federal Reserve System subject to important supervision based, in part, upon the rating system, but that non-member state banks and insurance organizations are similarly guided by various ratings.

During recent months a still further step has been taken in the direction of supervision on the basis of ratings. Typical of recent banking legislation, the new ruling goes further than any of its predecessors along these lines.

The practice of buying and selling investment securities by national banks is governed by Paragraph 7 of Section 5136 of the Revised Statutes of the United States of America, as amended by Section 308 of the Banking Act of 1935, which paragraph provides as follows:

> The business of dealing in securities and stock by the association shall be limited by purchasing and selling such securities and stock without recourse, solely upon the order, and for the account of, customers, and in no case for its own account, and the association shall not underwrite any issue of securities or stock: *Provided,* That the association may purchase for its own account investment securities under such limitations and restrictions as the Comptroller of the Currency may prescribe. . . . As used in this section the term "investment securities" shall mean marketable obligations evidencing indebtedness of any person, copartnership, association, or corporation in the form of bonds, notes, and/or debentures, commonly known as investment securities, under such further definition of the term "investment securities" as may by regulation be prescribed by the Comptroller of the Currency.

Thus are all national banks subject to the orders of the Comptroller in the securities which they may purchase for their own accounts. Other member banks are subject to the same supervision under Section 9 of the Federal Reserve Act, as amended, which provides in part that

> State member banks shall be subject to the same limitations and conditions with respect to the purchasing, selling, underwriting, and holding of investment securities and stock as are applicable in the

[28] J. W. Hatley, Assistant Commissioner of Insurance for the State of Arkansas, in a letter to the present writer, dated August 21, 1934.

case of national banks under paragraph "Seventh" of Section 5136 of the Revised Statutes, as amended.

In line with these stipulations the Comptroller on February 15, 1936, issued the following ruling:

By virtue of the authority vested in the Comptroller of the Currency by . . . Paragraph Seventh of Section 5136 of the Revised Statutes, the following regulation is promulgated as to further limitations and restrictions on the purchase and sale of investment securities for the bank's own account, supplemental to the specific limitations and restrictions of the statute.

. . . .

(3) The purchase of "investment securities" in which the investment characteristics are distinctly and predominantly speculative, or "investment securities" of a lower designated standard than those which are distinctly and predominantly speculative, is prohibited.*

* The terms employed herein may be found in recognized rating manuals, and where there is doubt as to the eligibility of a security for purchase, such eligibility must be supported by not less than two rating manuals.[29]

Of course, it is also provided that these regulations do not apply to securities acquired through foreclosure on collateral or otherwise acquired in good faith.

Among the first to recognize publicly the importance of the new ruling was the *American Banker*, which stated in part as follows:

The regulation limits investments practically to those with an A rating. . . .

Under the new regulation, the Federal examiners will have a more strict rule to use as a yardstick for bank investment portfolios, although not so strict in some respects as has been suggested.[30]

Although the *American Banker* interpreted the ruling to mean that, on the whole, bond investments would have to be confined to issues rated A or higher, there appeared to be much confusion as to the exact grade that would be acceptable to the Comptroller. In general, however, it was considered that issues rated Baa (Moody symbol) or equivalent in

[29] Regulations governing the Purchase of Investment Securities, and Further Defining the Term "Investment Securities" as Used in Section 5136 of the Revised Statutes as Amended by the "Banking Act of 1935," Sec. II, issued by the United States Comptroller of the Currency, Washington. February 15, 1936.

[30] *The American Banker*, Vol. CI, No. 47 (February 27, 1936), p. 1, col. 4.

other rating agencies would be acceptable, and there was some inclination to believe that issues rated one grade lower than that would barely fall in line with the specifications of the Comptroller's office.[31]

New York bankers, quick to realize the importance of the new ruling to "country" correspondents and others, found themselves besieged with inquiries as to the effects of the regulation. One of the banks met the situation by having a list of eligible issues sent in booklet form to every bank in the United States, all bank examiners, and to inquirers. Prepared by Securities Tabulating Corporation, of New York, this list was based, as to eligibility, upon an average of the ratings of the four principal rating services.[32] A rapid survey of this list revealed that 891 of the 1,975 bond issues listed and traded on the New York Stock Exchange and the New York Curb Exchange were eligible securities.

> In other words, the Comptroller's ruling will eliminate more than 50% of the domestic corporate bond issues listed on the Stock Exchange, or traded on the New York Curb Exchange, from being bought by banks.[33]

So far-reaching are the effects of such elimination that many protests arose as to the alleged unfairness of the ruling. It was felt that the limitation of bank investments to bonds enjoying the acceptable ratings was both unjust and unwise, and the application of the ruling became a principal source of nuisance to the Comptroller's office for months after its promulgation. Many bankers were intensely opposed to the ruling, and typical of their attitude was the expression of one state bankers' association:

> . . . we feel that the law does an injustice to millions of dollars of sound securities of medium-sized and smaller companies, whose securities are relatively as desirable as those of the larger companies. In other words, a premium is placed upon size rather than merit. Furthermore, under the regulation as issued by the Comptroller, we believe there is grave danger that many banks will be lulled into a

[31] *The Journal of Commerce* (New York), Vol. 167, No. 12,957 (February 28, 1936), p. 9, cols. 5, 6; *Ibid.*, Vol. 167, No. 12,958 (February 29, 1936), p. 2, cols. 4, 7.
[32] *Investment Service*, Manufacturers' Trust Company, New York (February, 1936), first unnumbered page preceding list.
[33] *The American Banker*, Vol. CI, No. 52 (March 4, 1936), p. 2, col. 4.

sense of security by the thought that they can safely buy and continue to hold any security which meets the rating requirements, when it is a known fact that these ratings are based upon past performance and do not take into account the possibilities of the future. We further believe that the delegation to these private rating agencies of the judgment as to what constitutes a sound investment is unprecedented in our history and wholly unwarranted by their records in the past.[34]

In connection with his mandate in the use of ratings as the practical *sine qua non* of bond investment, the Comptroller subsequently attenuated his dictum when he publicly remarked that

The responsibility for proper investment of bank funds, now, as in past, rests with the Directors of the institution, and there has been and is no intention on the part of this office to delegate this responsibility to the rating services, or in any way to intimate that this responsibility may be considered as having been fully performed by the mere ascertaining that a particular security falls within a particular rating classification.

Reference to the rating manuals was made in the regulation in recognition of the fact that many banking institutions, by reason of lack of experienced personnel and access to original sources, are unable personally to investigate the background, history and prospects of a particular issuer of securities, and consequently must rely to some extent upon such information as has been compiled by various rating services in their large rating manuals. It may also be expected that banking institutions will desire to supplement their own judgment by checking it against the opinion of others, including ratings that have been given by rating services. Such ratings, however, regardless of whether or not they are in the first four groups, are not conclusive on the question of eligibility. It is recognized that some securities, which are entirely eligible from a non-speculative standpoint at the time they are available for purchase, may have as yet received no rating by the rating services. It is also recognized that a security with a high rating according to the services may, in the circumstances of a particular case, be an undesirable investment, whereas on the other hand, conditions existing at the time of investment may make a security entirely eligible, notwithstanding the fact that it has a comparatively low rating according to the standard rating services.[35]

[34] Resolution of the Missouri Bankers Association at its 46th annual convention, Kansas City, Mo., May 5, 1936.

[35] From an address by J. F. T. O'Connor, Comptroller of the Currency, at a convention of the California Bankers Association, Sacramento, Calif., May 22, 1936.

The Comptroller added, however, that

> In the latter type of case, of course, there will be a correspondingly greater burden upon the bank to satisfy the examiners that a particular security is in fact eligible from a non-speculative standpoint.[36]

Thus it appears that while the Comptroller of the Currency has relaxed the concern of bankers over his ruling as to the eligibility of specific bonds for bank investment, the outstanding consideration remains the ratings assigned by the principal rating agencies.

Some of the practical effects of this new ruling are not difficult to foresee. Since prior to the ruling many of the banks had made numerous investments in issues rated lower than Baa (Moody symbol), the legal elimination of a very large part of the investment market for issues rated below Baa will increase the spread in the market value of Baa and Ba issues. From this it follows that banks affected by the ruling may expect to obtain lower yields from their bond portfolios than was formerly the case.

Non-member banks on the other hand will benefit from superior yields obtained from their commitments in the federally ineligible issues, provided that state banking authorities do not adopt the federal ruling for institutions under their jurisdiction. In general, unless other developments occur, yields out of proportion to the character of the risks involved should for some time be available in the lower-rated issues.

The Comptroller's ruling, however, will probably have results more far-reaching than those already mentioned. With the resulting lower yields from the higher-rated bonds, insurance companies, other institutional investors, trustees, and even some individual investors who insist upon, and in some cases, are restricted to, the highest grade investments, may be encouraged to look for other avenues of investment from which the yields are superior. This may stimulate still further developments in such fields as real estate mortgages, etc.

Another effect of the ruling is likely to be felt in the flotation of new issues. Although new issues often are not rated

[36] *Ibid.*

until after they have been distributed, in many cases the larger issues are rated prior to distribution. Issues rated lower than Baa or its equivalent may be expected to find a thinner market than previously, whereas under the new order issues receiving a rating of Baa or higher may, other things being equal, expect to find a better market than ever. As a result, issues rated Baa or higher may carry higher flotation prices than would otherwise obtain, and issues rated Ba or lower may carry lower prices. This probability may of itself cause many corporations to attempt to arrange their new issues so as to make them eligible in the eyes of the rating agencies for the higher classifications. Thus the Comptroller's ruling will probably influence some corporations to place their houses in better order.

In addition, the increased demand for bonds in the higher classifications will probably encourage those corporations which issued those securities in the past to refinance their obligations on more favorable bases. This should lead to a burst of refinancing and therefore, renewed activity among investment bankers. In the new financing, one may expect to find either less in formal assurances of safety among the very highly rated issues or lower coupon rates, more probably the latter. The financial burden of fixed obligations being thereby reduced, holders of both the preferred and common stocks of such corporations should benefit.

Finally, the Comptroller's ruling will probably cause commercial banks to look more than ever to the rating agencies as sources of authority concerning investment. This situation has already been anticipated by one banking journal which captions an interpretive discussion of the new ruling as follows: "Four Statistical Houses' Ratings Govern Federal Banks' Investing." [37] Bushnell likewise finds that the ratings have grown in importance in recent years and adds that

> With the prominence given ratings in the quality determination, the question of the benefits and *limitations* of ratings is a very important one to the bank investor.[38]

[37] The *American Banker*, Vol. CI, No. 50 (March 2, 1936), p. 1, col. 2.
[38] George D. Bushnell. "Investments Join Loans," in the *Rand McNally Bankers Monthly*, Vol. 53, No. 6 (June, 1936), p. 367.

In summary, it is clear that varying degrees of reliance are placed upon security ratings by the different types of users. This reliance extends from using the ratings merely as a check on individual judgment to complete and absolute dependence. Whether such confidence is justified by the record is one of the questions to be answered in the present investigation.

Growth in the Use of Ratings.—Such public confidence in the rating system of course confirms the "hunches" held by Babson, Moody, and Putney in the very early years of the century. It constitutes confirmation of their belief that investors wanted not detailed analyses but positive statements of the relative value of investment securities. The ever-increasing use of the ratings has strengthened their position, has given them the earned right of satisfaction. It is unanimously asserted by the rating agencies that the use of bond ratings today is greater than ever before and that the use of and reliance on the ratings is growing year by year. This is especially true of trust companies in the investment of trust funds. As stated by one observer, "The use of ratings for measuring the goodness of trust funds is greater today than ever before." [39] Increasing numbers of subscribers testify to this growth as does the fact that many banks report to the agencies an ever-increasing consultation of the ratings by their clients.

Proof that the ratings are relied upon as authoritative indices of investment quality is much more readily obtained today than when the ratings were a new factor on the financial scene. Characteristic of such reliance is the statement of Sargent when he reflects that

> With a list containing nearly a quarter of a million dollars' worth of highly speculative, uncertain, defaulted, and "no-rating" bonds, I had the job, a little over a year ago, of making some radical improvements.[40]

Examination of this banker's story of "How We Improved Our Bond List" shows that the improvement was measured

[39] Edward J. Reilly, *op. cit.*
[40] Guy D. Sargent, "How We Improved Our Bond List," in the *Rand McNally Bankers Monthly*, Vol. 52, No. 5 (May, 1935), p. 292.

solely on the basis of ratings. The following tabulation shows the improvement recorded by this banker over a one-year period, except that the percentages were computed from Sargent's dollar figures by the present writer.

ONE YEAR'S CHANGE IN THE PORTFOLIO [41]

Rating	Type	Bonds Held December, 1933	Bonds Held December, 1934
A1	High Grade	1.1	1.7
A	Sound	3.0	14.8
B1+	Good	8.6	26.9
B1	Fair	6.9	8.2
B	Semi-speculative	23.8	33.0
C1+	Speculative	17.5	6.5
C1	Highly speculative	5.7	6.1
C	Uncertain	4.3	...
D1+	Defaulted	19.6	1.8
No rating	No rating	9.5	1.0
		100.0%	100.0%

Another writer demonstrates the position of the ratings in the consciousness of bankers when, in a series of articles of banks' bond portfolios, he refers to quality almost solely in terms of ratings. In one issue, for example, Bushnell reports:

> There have been several changes in the quality of the industrial group in recent weeks. The Firestone Cotton Mills 5's of 1948, which were purchased last fall, are now rated AA; the American Ice Co. Debenture 5's of 1953 which we considered selling a few months ago but decided to hold, are now considered in the A class. The same is true of the Remington Rand 5½'s of 1947 and of the International Cement Debenture 5's of 1948.[42]

Further recognition of ratings as a basis for evaluating the quality of securities is made by such financial publications as *Barron's* and the *Wall Street Journal,* both of which quote security ratings in replying to questions of their readers regarding the merit of specific securities. And in the academic field we find, among others, the work of Fraser, who, in tabu-

[41] *Ibid.* The ratings are Standard's.

[42] George D. Bushnell, "Bond Revisions Upward," in the *Rand McNally Bankers Monthly,* Vol. 52, No. 7 (July, 1935), p. 429. The ratings mentioned are Fitch's.

lating important data relative to a given portfolio, allows two columns for Moody and Standard ratings of the respective securities.[43]

Psychological Basis of Ratings.—It is a common statement among psychologists that fear is one of the two or three primary emotions of men.[44] One of the greatest fears is the lack of physical support. It is this basic fear of the lack of support, transposed into an intellectual sphere, that constitutes the chief psychological basis of security ratings.

It has become a principle among bond investors that a rating manual must be consulted before a bond may be purchased (new issues excepted). The individual, whether acting for himself individually or as trustee or for his organization, is fearful of committing his funds to the use of others without some supporting opinion from what he, as well as others, considers an authoritative source. Such an opinion may be found in the ratings. When an issue appears to be remarkably attractive, of high security, of good yield, and possessing other desirable attributes, the individual hesitates to buy it lest there be some undesirable hidden features which he has overlooked or has lacked the competence to uncover. When he discovers that his own high opinion of the issue is confirmed by the rating, he is content to authorize its purchase, feeling satisfied that he has acted wisely. Given no rating, he would waver. Given a low rating, he would almost certainly decline to consider it further; in other words, he would refuse to be guided by his own analysis. Apparently this holds not only for individuals but also, to some extent, for institutions, for even banks exhibit this desire for support when they telegraph requests to the agencies for ratings on new issues and when they consult the rating of an established issue before advising a client to purchase it. This constitutes a kind of evidence that there is at least some popular appreciation of the technical equipment necessary to make sound

[43] C. E. Fraser, *Problems in Finance* (McGraw-Hill Book Co., Inc., New York: 1927), pp. 782-785.

[44] See, for example: Shepherd I. Franz and Kate Gordon, *Psychology* (McGraw-Hill Book Co., Inc., New York: 1933), p. 469; Frederick H. Lund, *Psychology: An Empirical Study of Behavior* (The Ronald Press Co., New York: 1933), p. 198; or any standard work in the field of psychology.

investment decisions. At the same time, it is true that many men feel competent to select investments who would never think of attempting to be their own lawyers or doctors. Rating services perform here a dual function. They offer a degree of protection in the individual who knows his limitations; they shield the self-sufficiency of the individual who does not.

Not only fear but laziness is doubtless responsible in large measure for the success of the ratings as measured by their ever-increasing popularity. Many investors feel that because the rating agency has conducted an investigation of a specific issue there is little need for them personally to expend time and energy to repeat the agency's process. It is indeed a process of simple reasoning. The investor is a busy man or considers himself to be such. The rating agency, with its staff of trained workers and its great facilities, has already estimated the relative investment value of the issue under consideration. Why, then, should the busy investor be burdened with a task of reappraisal when recourse to a rating manual is so easy?

Economic Basis of Ratings.—When it is acknowledged that the ratings are used largely as substitutes for individual analysis by countless investors, it becomes clear that one factor of considerable importance in the growing use of the ratings is a saving in cost of investigation. The position of the ordinary investor with reference to the labors of investigation is illustrated by Graham and Dodd when they remark that

> A buyer of a $1,000 bond would not deem it worth his while to make as thorough an analysis of an issue [even if he were competent to do so] as would a large insurance company considering the purchase of a $500,000 block.[45]

Nevertheless, large institutional investors, even though they employ investment staffs, are not forced to maintain such large departments or so many analysts as would be required if ratings were not available. The close supervision of hundreds,

[45] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. 33. The bracketed phrase is the present writer's.

perhaps thousands, of issues in the institutions' portfolios would call for the talents of many trained workers. Ratings are relied upon as a substitute for some, and perhaps much, of this labor and consequent expense. Even among the large institutional investors the process of individual analysis, though not eliminated, is reduced by the availability of ratings. The smaller the institution, the more pronounced is this tendency.

Had it not been for the enormous growth of industry and of corporate organization during the past thirty years it is doubtful that this feature of economy would have played an important rôle. But the horizon of bond investment has expanded from governments and some of the more important corporations, especially railroads, to include all manner of enterprises. This gigantic expansion has brought into being bond issues of so many different types of enterprises, many of them local in character, that to become expert in the analysis of a large number of them is in itself a monumental task. The use of ratings is, therefore, a means of accomplishing an economy in cost of analysis, even in those cases wherein the ratings are not a complete substitute.

Economic Effects.—It is difficult to appraise accurately the full economic effects of the institution of bond ratings. Certain it is that their use by countless investors must find expression in relationships that would not prevail had the ratings never been developed.

It is evident, for example, that the ratings must have some influence on the profession of investment counsel. The more people are guided by ratings, the less need is felt for the personal touch of the investment counsellor. There are undoubtedly numberless bond buyers throughout the country who operate on the assumption that the ratings, although not as desirable as good personal counsel, are, for the price paid, a satisfactory and expedient substitute. As stated by Graham and Dodd, "It is not clear as yet whether advice on a fee basis will work out satisfactorily in the field of standard high-grade investments, because of their relatively small income

return." [46] And if advice on a fee basis does not prove satisfactory in the case of such investments yielding low returns, it appears reasonable that ratings will increase in importance and will become even more firmly entrenched in the field of bond investment.[47] Thus the growth of the bond rating system may, in part at least, detract from the profitableness of the investment counsel business.

Likewise, there are effects on the corporations themselves. The fact that the rating agencies usually decline to rate or rate lowly an issue when the corporation fails to submit what the agency considers sufficient data is a force which has brought some improvement along this line. The ratings may also tend to raise the price at which a corporation may sell a new unrated issue, if the rating of the old issue be high, or to depress it if the rating of the old issue be low. Likewise, the ratings may serve to cause the corporation to strengthen a proposed issue before offering it, on the basis that if not so reinforced the issue may receive a low or mediocre rating, and thus impair its standing. This likelihood is exemplified in the instance of the California public utility corporation that threatened to sue one agency on the ground that its credit had been injured because of an allegedly undeserved low rating on its bond issue. It does not appear unreasonable, therefore, to suppose that the existence of the rating system is one element in forcing corporations seeking a high credit standing so to erect their bond issues that they may meet with the favor of the rating agencies.

In connection with the risk rating of non-corporate mortgages, it has already been remarked that just as "It requires little imagination to envision the possibilities for improved construction [of houses] if it were generally known to the public that the Federal Housing Administration was rating houses according to their desirability, that certain types of construction were regarded higher than other," [48] so it is entirely logical that corporations should be pressed by the exist-

[46] *Ibid.*, p. 236.

[47] Under such circumstances it is also probable that some investors would commit funds to the care of investment trusts and similar organizations.

[48] "The Risk Rating of Mortgages" in the *Architectural Forum*, Vol. 63, No. 3 (September, 1935), p. 214.

ence of the rating system to strive for as favorable a structure as possible, in order to merit or get a particular rating rank.

Gerstenberg comments on this point when he remarks, in connection with the financial management of corporations, that

> It behooves the company management, where such rating is given, to maintain for its securities as high a position as possible. Indeed, every corporate official ought to look ahead to the day when the securities of his company will be rated. In the meantime, if proper attention is given to the factors that make for good rating, securities will be more salable than they would be if the investor's viewpoint were entirely neglected until the very moment when a new issue is about to be launched.[49]

Investment bankers also feel some effects of the ratings. It is well known in bond circles that many new issues would be offered to the public at higher figures if the ratings on the corporation's existing issues were higher. It is also common knowledge that the standing of the banking house sponsoring a given issue has some bearing on the issue's rating.[50] It follows quite naturally that the corporation, for this reason as well as for others, may wish to obtain banking sponsorship of as high a position as possible, thereby working some hardship on those houses of lesser rank. Furthermore, since the system of ratings tends to drive the market price of a particular issue toward the average price for other issues of the same rating, it must certainly narrow the spread between the prices at which the bond house is buying and selling the issue. It is therefore difficult to understand how the investment banking profession could be anything less than concerned over the wide acceptance which the ratings have achieved.

Probably the most important economic effect of the use of bond ratings is found in the bond market itself. It is reasonable to suppose that bonds of the same rating should tend to be valued on yield bases approaching the average for all bonds of that rating.[51] The fact that serious attention is given to the ratings supports such a conclusion. In this connection it is of interest that more or less similar results are expected

[49] Charles W. Gerstenberg, *Financial Organization and Management of Business* (Prentice-Hall, Inc., New York: 1932), p. 356.

[50] The *Fitch Bond Book*, 1929, second unnumbered page after Foreword.

[51] Empirical evidence of this will be given and discussed in Chapter 8.

from a rating system recently inaugurated in the real estate mortgage field. As expressed to an audience of architects, ". . . should the full implications of mortgage risk rating ever be realized, the result will be as accurate a yardstick of property values as has ever been devised." [52] Of course, it is recognized that the two cases are not exactly analogous. The contention in one case is that the ratings affect the value of the things rated, while the assertion in the other is that the ratings will affect the value of the thing on which the rated commodity (mortgages in this case) is based. It is probable, however, that the mortgage risk ratings will have a very considerable bearing on the financial history of specific mortgages, since records will eventually be available as to the experience with mortgages of different rating grades.

And akin to this subject it is noted that Reierson, although he admittedly offers no proof of his conclusion, asserts that "Quality (as measured by rating) apparently has greater effect upon market price of capital than does the type of utility." [53]

Since it is granted that ratings must of necessity affect the market prices of specific bonds, it follows that not only do bonds of a given rating tend to cling together in yield, but that the market as between different issues is steadied by the existence of ratings. Empirical evidence of this latter conclusion, however, cannot be adduced, for it is not possible to isolate factors other than the absence or presence of ratings. Bonds not rated by one agency are often rated by another. Even among those few bonds not rated by any agency, other factors are present. Such bonds are not rated because sufficient data upon which to base a rating are not furnished by the corporations concerned,[54] or because the issue is small or is closely held and hence of very slight public interest. It is obvious that either the size of the issue or the closeness of its ownership, and consequently its marketability, may have very great bearing on the market action of the issue, and any conclusions

[52] "The Risk Rating of Mortgages" in the *Architectural Forum*, Vol. 63, No. 3 (September, 1935), p. 212.

[53] Roy L. Reierson, *Measurement of the Price of Public Utility Capital:* 1919-1933. An unpublished doctoral thesis, Northwestern University, 1935.

[54] *Poor's Ratings*, 1929, p. 1.

based upon statistical computations as between rated and unrated issues would necessarily need to be qualified by the factors of size and closeness of ownership and, therefore, marketability. It is clear, however, that if the ratings are widely accepted as reasonably accurate, expert estimates of the investment value of specific issues (and they are so accepted), bonds of given ratings will tend to gravitate in market valuation toward the average of bonds of the same rating; and applying this principle to the bond market as a whole, it necessarily follows that the ratings tend to stabilize the market value relationship between bonds of different ratings.

The question may be raised as to whether ratings tend to direct new capital into particular industries and away from others, depending on the rating agencies' appraisal of the present and prospective merits of those industries. No trustworthy statistical data can be adduced in answer to this question, for even if it were shown that the largest flow of new capital was into those industries enjoying, on the whole, high ratings, causal relationship would not necessarily follow. And there is serious doubt that even so much can be shown.

Legal Aspects.—With reference to the management and disposition of fiduciary investments, it has been judicially stated that,

> The test by which the conduct of the executors must be gauged is not whether or not some one, after the event, will assure the court, either gratuitously or at so much per diem, that the executors in their estimation, did or did not do the best thing which was possible under the circumstances. It is whether they conscientiously took advantage of the sources of guidance which were reasonably available to them and governed themselves accordingly.[55]

What the proper "sources of guidance which were reasonably available" are, the court, in this case, does not state, but some light is thrown upon the matter in another case, in which the court said,

> It is urged on behalf of the executor that he was inexperienced and unlearned in the way of investments, and relied upon the recommendation and advice of the Equitable Trust Company, an institu-

[55] *In re McCafferty's Will*, 264 New York Supplement 450 (1933).

tion of splendid standing in the financial world. This would, perhaps, go far to absolve him from lack of good faith in the premises, but it cannot excuse him from an improvident and imprudent investment, especially in view of the fact that the Equitable Trust Company was financially interested in the sale of the bonds. Its advice could not, by the very nature of things, be disinterested. It was inevitably tainted by self-interest.[56]

This decision makes it clear that when the fiduciary relies on the guidance of others he must, if he wishes to avoid a surcharge, select such advice from a disinterested authority. This is, in fact, a simple procedure. Many disinterested advisors are available to the fiduciary who wishes to rest upon such advice. Presumably any banker known in the community for his good business judgment is an acceptable advisor. Any investment counsellor of good standing should be acceptable to a court, even though the court might not be willing to approve a charge against the trust for the counsellor's services. Is it not reasonable, then, that ready-made investment counsel, in the form of security ratings, should stand upon the same footing so far as the judiciary is concerned? There are, in fact, a number of reported cases in which judicial notice has been taken of the investment services as appropriate sources of information. In 1897, the court particularly approved reference to *Poor's Manual* of 1890 among other sources, in holding that

> It must be conceded, under the evidence, that the trustees used all the care that a person of ordinary care and prudence would use in determining upon an investment of his personal funds.[57]

The investment in question was an electric railway bond, which, at the time that the trustee's purchase was challenged in court, had begun to suffer the decline which has since marked the entire industry. The Court remarked in extenuation:

> The propriety of the investment must be judged as it was at the time it was made and not as viewed in the light of subsequent facts.[58]

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[56] *In re Hurlbut's Executors*, 206 New York Supplement 450 (1924).
[57] *In re Bartol*, 182 Pennsylvania 407; 38 Atlantic 527 (1897).
[58] *Ibid.*

Again, at the bottom of the post-war depression in 1922, the same court refused to surcharge a trustee for the depreciated market value of certain bonds. "They were, when bought in 1915, and yet are, good bonds," said the appeal court. And in support of this opinion, the court cited the findings of the auditing judge and the reference therein to ratings in the following language:

> In *Moody's Manual* for 1914, these . . . bonds are rated: Security, very high; Salability, good; net rating, A. His manual gives the facts from which this conclusion is drawn. It appears from the testimony that bonds of this issue were brought out by Drexel & Company and Harrison & Company, both banking houses of this city of the highest reputation. This trust estate purchased them from Harrison & Company. It furthermore appears that they were bought by trust estates, trust companies, and insurance companies. The net earnings of the company for 1912 were about 3½ times the interest charges, and while this was not a first mortgage, bonds of this issue were reserved to retire all prior liens. From 1902 until 1912, the net earnings of the Company steadily increased from something under $800,000 to more than $2,500,000. . . . I find that these bonds, while not of the highest grade, were such as were purchased by conservative investors, and considering that this trust was not limited to legal investments and the beneficiaries were anxious to get a return of 5%, were a proper investment for this estate. Had interest rates remained the same these bonds would probably be convertible today without loss.[59]

From this opinion, it appears that ratings have been accepted by the courts as corroborative evidence, but are not in themselves decisive as to the propriety of a particular purchase for a particular purpose. They have their place in an appraisal of a proper trust investment, but do not establish a judicial principle or norm, apart from circumstances. This point is brought out clearly in a later case. In the deflated market of 1931, a trustee's action in retaining the original holding of "investment" stocks in the trust was questioned. The court, in upholding the trustee's position, made an issue of the difference between retaining the securities purchased by the testator and held by him at the time of his death, and an original investment of trust funds in the same securities.

[59] *In re Detre's Estate*, 273 Pennsylvania St. 341; 117 Atlantic 54 (1922).

Moody's ratings of these stocks were cited by the court in support of their investment status as opposed to a speculative standing.

> The stocks other than the bank stocks are given a rating in *Moody's Book of Stock Ratings*—some as A, others Aa, Ba, and B. The Aa rating is a high investment rating and given to few common stocks. It indicates a dominant position in the industry, tremendous earning power, and ample cash resources. The rating A comes in the investment group but to a lesser degree. B is the rating applied to the stocks of companies which give the expectation of a regular dividend payment. Ba is given to a common stock when the company has shown definite progress in its line, has built up reasonable equities for its securities and has shown a reasonable ability to continue dividend payments.
>
> There is a distinction between seasoned securities of this character here involved and investments in speculative securities.[60]

That is to say, that ratings have been specifically admitted as partial evidence of "sound discretion" on the part of the trustee. It does not follow that ratings alone would establish the fact of due care and prudence. What is "sound discretion" in a particular case rests upon too many variables for any such rule of thumb: business conditions; the amount, the purpose, and the character of the trust; the wishes and the intentions of the creator of the trust. In the many cases clarifying the judicial principles of trust investment, the application of ratings has been incidental in the development of guiding rules; a judicial test of the validity of the trustee's using ratings as the sole criteria of the propriety of trust investments appears never to have been made. It is interesting but idle speculation to wonder what the court's decision would be were it asked to pass upon a trust investment in Chicago, Rock Island & Pacific 4s-1988, which were rated Aaa (Moody symbol) by all agencies in 1929, and five years later were in default, an Aa rating having been maintained up to the threshold of default. Whether the trust were large or small would have something to do with its findings, no doubt, for it has been held that railroad bonds, although secured by mortgages on property real and personal, are not proper investments for

[60] *In re Winburn's Will*, 249 New York Supplement, 758 at 762 (1931).

trust funds because the holder of a small amount of them is unable effectively to protect his investment.[61] Are judicial rules of this character weighted by the rating agencies in the assignment of ratings? There is nothing to indicate that judicial precedent enters into the rating decision.

From those cases in which investment ratings have been definitely accepted by the courts, it is perhaps safe to conclude that when a fiduciary, in making investments for his fund, is not restricted by reason of the instrument creating his trust or by the laws of the state, to specific securities possessing certain qualifications (such as legality of investment by savings banks) he may, in so far as the courts are concerned, rely to some extent upon the ratings assigned to specific securities as being disinterested, authoritative and expert, and such ratings may be offered as evidence. Purchase by the fiduciary of securities carrying specific ratings generally accepted as the mark of high-grade securities, may, according to individual circumstances, be accepted by the court as corroborative proof of "ordinary care and prudence."

[61] See Hugo Grimm, "Legal Investments for Trust Funds in Missouri," in the *St. Louis Law Review*, Vol. 14, No. 277 (1929); also *In re Will of Mendel*, 164 Wisconsin 136; 159 Northwest 806 (1916).

CHAPTER 4

BASES OF THE RATINGS

Key to Security and Stability.—The following statement is the opening gun of Moody's general explanation of the rating system:

> The fundamental thought back of the system of rating investment securities . . . has been to furnish an authoritative key to the relative security and stability, from an investment standpoint, of all types of bonds and stocks.[1]

The use of the word "authoritative" in this statement by Moody deserves attention. Self-appointment to a position of alleged authority can readily be seized upon by investigators and even by satirists as a suitable beginning for a general critique.

Moody's idea, if workable, is, of course, a good one. The need for the service is apparent; the material for its creation is available; the market is extremely large; and the profitableness of the business is practically assured. The proposition, then is to afford the investor in one symbol an "authoritative" judgment of all the qualities of specific bonds. There is not to be one rating for the legal position of the issue, another for the earnings record, another for the nature of the industry, and still another for the company's management, but rather a single rating is to be handed down representing a full appraisal of all these and many other factors. Certainly such an undertaking must have far-reaching significance.

It is of interest that a practically analogous task has recently been undertaken by one of the New Deal agencies of the federal government. Denoted "mortgage risk rating," the process has been expounded to the staff of the Federal Housing Administration in the following terms:

[1] Moody's *Manual of Industrials*, 1931, p. vii.

Risk rating is of significance because it not only makes possible the classification of mortgages as either "good" or "bad" but it also enables differentiation of the varying degrees of excellence which characterize the "good" ones. It is also significant because it makes possible the grading of mortgages by means other than the traditional one of determining the ratio between the principal amount of the mortgage and the valuation. This traditional ratio is included in risk rating but is only a part of it. It is recognized that the likelihood of default and probability of foreclosure and loss are only partially described by this ratio and that sound mortgage-lending practice requires additional analyses of a character which will weigh all risk factors and actually accomplish the comparative measurement and rating of mortgage hazards.[2]

In other words, what the commercial credit bureaus have done for the business man and what the security rating agencies have done for the investor, the Federal Housing Administration proposes to do for itself. The Administration believes that it needs such risk ratings in connection with its insurance of mortgages. Each mortgage for which insurance has been requested is very elaborately analyzed, and after certain weights have been given to each of the large number of elements entering into the process, a final over-all score is reached. From this score the mortgage automatically receives one of the four ratings: A, B, C, or Reject. Thus, should a mortgage qualify under any of the first three ratings, it is eligible for FHA mortgage insurance. Since the mortgage insurance is in reality mutual insurance, and since an excellent financial record is anticipated, it is expected that dividends will be declared for the benefit of the mortgagors. These dividends are to be based upon the ratings received, the dividends to be highest for that class (A, B, or C) having the best record and lowest for that group having the worst record. It is expected, of course, that the A risks will have the best record and that the C group will develop the most casualties. Thus, although using a rough scale consisting of only four grades, the Federal Housing Administration is performing a task in the real estate field almost analagous to that of the security rating agencies in the field of bond investment. The

[2] Federal Housing Administration, *Underwriting Manual* (Federal Housing Administration, Washington: 1935), Pt. I, Par. 610.

effects may turn out to be somewhat different, but the bases of analysis appear to be closely related. Indeed, it may prove, if the FHA's ratings are assigned to a sufficient number of mortgages and over a sufficient length of time, that these mortgage risk ratings may have far-reaching effects upon real estate and upon the mortgage market, not now fully contemplated.

Some of the effects of mortgage risk rating are anticipated in the remarks of a leading authority on real estate appraisals who is now an official of the Federal Housing Administration. Referring to mortgages (a field of investment very closely related to bonds), Babcock submits that

> We must be careful not to underestimate the significance of the risk-rating principle. It is a hedge against mistakes resulting from changes in price levels. It multiplies the chances of selecting stronger loans. Different loan deals are analyzed on a comparable basis and there is a strong presumption that the decisions of lenders will be more uniform and less competitive except in so far as the general lending policies of lenders differ. Mortgages will be described in terms of degrees of risk rather than simply as good and bad loans.
>
> . . . .
>
> The risk rating principle focuses attention on risk. It will result in the exercise of greater caution by the less skillful lenders. It will cause lenders to act with greater dispatch and certainty and on better terms where good loans are involved. It will cause them to be more definite and positive in the rejection of poor loans. This, in turn, should tend to produce better real estate in America.[3]

Whether or not one is willing at this time to go as far as Babcock in some of his anticipations, it seems probable that mortgage risk rating, using a single symbol to include all the factors found in a single mortgage, will have extensive effects approaching more or less those delineated above.

Like the risks of individual real estate obligations, it is considered that bond issues are of such nature that they may be rated with an all-inclusive symbol designating their respective investment merits.

[3] Frederick M. Babcock, "A New Approach Toward Solution of the Appraisal Problem," in the *National Real Estate Journal*, Vol. 37, No. 13 (December, 1936), p. 49.

Assumptions.—Of course, Moody's statement implies certain assumptions: (1) that investment securities are capable of being analyzed, (2) that the rating agency is fitted by intelligence, training, and facilities to perform such a task, (3) that the rating agency is impartial, and (4) that there is a demand for such a service. The existence of a wide market for such a service has been amply demonstrated; validity of the other assumptions is open to question.

Suitability of Corporate Data for Analysis.—Consideration of the first assumption involves many angles. Much has been said concerning the inadequacy of financial information about given enterprises. Corporate managers are even accused of wilfully deceiving their absentee employers, the stockholders, and in general it may be maintained that even under the best corporate practices accounting data made available to stockholders are inadequate as a basis for scientific analysis.

To mention only one respect in which corporate reports may not accurately reflect the actual position of the business, is the very general use of the artificial calendar year instead of the natural fiscal year. The general adoption of the artificial or tax year followed the income tax law in 1916, partly for convenience, partly through a misapprehension of the law. The natural year is defined as ". . . that period of twelve consecutive months which coincides with the annual cycle of operations of that enterprise." [4]

A survey made by a large New York bank for the Natural Business Year Council, in November, 1935, showed that of 144 customers representing 64 businesses or phases thereof, 93 used the calendar year for their fiscal years with December 31 closings, and 51 used a natural business year with the last day thereof for closing. Of the 51 concerns, 10 used June 30, 6 used September 30, 6 used November 30; 4 each used March 31 and October 31; 3 each used February 28 and July 31.[5] In a study of 439 leading firms in 1925-1926, made by a graduate student at the University of Illinois, 72% were using

[4] Bulletin of the Natural Business Year Council (New York City), November 25, 1935.

[5] *Ibid.*

the calendar year, whereas it was the natural year for only about 20%.[6]

A typical point of view of bankers as to the effect of such confusion upon financial standing is that next to the character and ability of the personnel of any organization is the need for proper accounting. Although bankers are not in full agreement as to the degree of importance attached to lack of uniformity by those who are most interested in the question, it is clear that the use of different calendars by business enterprises does impede the rating agencies in their difficult task of appraisal.

There appears to be a fairly marked evolution in the demand for more information for stockholders and therefore, indirectly for the public. Kirshman designates four stages to date in this process.[7] First came the desire on the part of the consuming public for information about those enterprises generally understood to be vested with a public interest. Early in this group were the banks and insurance companies followed by the public utilities and the railroads. As Kirshman points out, "The reason in all these cases was the nature of the business rather than the form of organization." [8] The next stage came with the integration of corporations into "trusts" which gave rise to popular clamor for more publicity about such combinations "as a protection to the consuming public." [9] The third step was taken by security owners who demanded more information about their investments. Kirshman's last "stage" was really not a stage but a justification. He finds "a still broader reason" in "the social position of the corporation as the chief vehicle for the direction of the funds of the public into whatever industries promise the best results." [10]

Along with the factors of suitability and sufficiency of corporate accounts for purposes of rating, the frequency of cor-

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[6] R. S. Johns, C.P.A. The substance of his thesis was published in *The Natural Business Year*, Bulletin No. 11 of the Bureau of Business Research, University of Illinois, 1926; and summarized in articles in accounting publications.

[7] John E. Kirshman, *Principles of Investment* (McGraw-Hill Book Co., Inc., New York: 1933), pp. 236-239.

[8] *Ibid.*, pp. 237-238.

[9] *Ibid.*, p. 238.

[10] *Ibid.*

porate reports needs to be considered. There appears to be frequent use of the quarter year as the period over which a report should extend. In a survey of the practices of 728 corporations in many lines of industry, Hicks found that 51.7% reported quarterly. The remaining group was about equally divided in the issuance of semi-annual and annual statements with a small proportion of companies reporting monthly. Most of the monthly reports came from public utility companies.[11]

It is not to be assumed, however, that frequency of reports means adequacy of reports for purposes of analysis. For even if the reports were daily the information contained therein may be—and, on the whole, the reports, whenever issued, are —woefully lacking in the type of information which is necessary for any scientific analysis.

Criticism on this score is offered by Sloan, who, because of his work as an officer of one of the leading statistical organizations in the country[12] (which is also one of the rating agencies), is greatly affected by this condition. In a caustic attack Sloan states

We contend that the average corporation report is not merely inadequate, but woefully inadequate; that it does not give the security owner the information to which he is entitled, and that it does not give him all the information that is necessary if he is to make a competent decision as to whether the securities he owns should be held or disposed of. And if it is not the primary function of corporation reports to give precisely these data, then we admit that we are quite at a loss to understand what type of information corporation reports are really intended to convey.[13]

And Hoagland summarizes the practice of late reporting when he remarks that

Monthly earnings of American railroads are available to the public [and presumably to the rating agencies] about six weeks in arrears: to insiders about one week in arrears. Careful and fairly accurate estimates are available to the latter sometimes three weeks in ad-

[11] These data, as well as Kirshman's description of the evolution of corporate publicity, were taken by Kirshman from "an unpublished thesis by Clifford M. Hicks, *Compulsory Publicity of Corporate Affairs*, University of Nebraska."

[12] Vice President and Managing Editor of Standard Statistics Co., Inc.

[13] Laurence H. Sloan, *Corporation Profits* (Harper & Bros., New York: 1929), p. 334.

vance. Industrial corporations commonly report to stockholders annually, several months after the close of the fiscal year. Months and even as much as a year may elapse between the occurrence of an important event in the life of a corporation and the notice of such event to the stockholders. By the time such information reaches the mass of stockholders [and bondholders], the effects of the event may have been discounted by those in a position to know about it long before it comes to the attention of the majority of the stockholders.[14]

Strong objection to detailed reports is voiced by corporation managers. Detailed reports involve trade secrets, intimate items of operating expenses, sales costs, and other data of such character as to put successful firms at competitive disadvantage, it is claimed. Despite such opposition, however, the past twenty years have witnessed a tendency toward fuller reports.

One side of this problem is presented by Walker who contends that even if all the figures were known there would still be something lacking which is not and never can be made the subject of statistical analysis. Walker argues that

In industrial enterprise the greatest of all risks is management. . . . No analyst without intimate contact with management and close knowledge of the minute details of operations can correctly appraise this human factor in the individual industry. After all, the purchaser must pin his hopes on faith in courageous, aggressive, and competent management. He cannot prosper by figures alone.[15]

To this assertion the champions of detailed reports would counter that the competence of management is best measured through the detailed figures. Another statement in favor of corporate publicity is made by Simmons when he says that

The [New York] Stock Exchange is on unassailable ground . . . in endeavoring with all its power to make available to the public information concerning its listed securities, sufficient to permit American investors to judge adequately concerning present and prospective investment values for themselves. Undoubtedly the most important function of the listing operations of the Exchange, as far

[14] Henry E. Hoagland, *Corporation Finance* (McGraw-Hill Book Co., Inc., New York: 1933), p. 409.

[15] Q. F. Walker, "Some Practical Objections to Compulsory Publicity of Accounts of Industrial Enterprises," in the *American Economic Review Supplement*, Vol. 17, No. 1 (March, 1927), pp. 35-36.

as these relate to determining investment value, is to further corporate publicity and the wide publication of essential facts and figures regarding the securities admitted to our list.[16]

In addition to the growing demand of investors for more complete corporate information, the New York Stock Exchange and the various government regulatory commissions have been the most potent forces in the drive for more detailed reports. This movement has received additional powerful impetus from the recently enacted Securities Act of 1933 and the Securities and Exchange Act of 1934.

It is significant that some students of the security markets find it necessary to say,

> It seems reasonable to believe that the manuals and accompanying publications here under consideration could call their readers' attention to the defects and pitfalls of corporation reports as they regularly appear in this country. At times they undoubtedly do what they can in protecting the public from the consequences of faulty corporation reports, as witness the numerous footnotes in connection with financial statements calling attention to sundry facts which the reports of the reporting corporation itself have left to the imagination of their stockholders and the public. Yet this is by no means always the case.[17]

Another phase of the problem of the suitability of corporation reports for analysis has to do with the lack of uniformity in terms and in accounting procedure. Typical of the criticism by many corporate security holders is the view of Ripley wherein, preliminary to his detailed attack, he states that

> Confronted with a great pile of recent corporate pamphlets on my table, the first impression is of their extraordinary diversity, in appearance, in size, content, and intent.[18]

Sloan characterizes this situation tersely when he remarks, "To the sin of omission is added the sin of disorder and irregularity." [19] Assuming uniformity of statement form to be

[16] Edward H. H. Simmons. *Listing Securities on the New York Stock Exchange* (Committee on Publicity, New York Stock Exchange, New York: 1926), p. 21.
[17] Twentieth Century Fund, Inc., *Stock Market Control* (D. Appleton-Century Co., Inc., New York: 1934), pp. 140-141.
[18] William Z. Ripley, *Main Street and Wall Street* (Little, Brown & Co., Boston: 1927), p. 162.
[19] Laurence H. Sloan, *op. cit.*, p. 335.

desirable for purposes of analysis, the lack of it is certainly deplorable. In brief, as Sloan has pointedly stated,

> Not only is there a lack of uniformity in financial reports as between one industry and another, but there is a wide variation in form as between various concerns in the same industry, and in some cases there is a sharp difference in the form of report issued by a single concern in two successive years—with no effort whatsoever to make comparison possible.[20]

Complete uniformity of statements, however, is probably impossible. Differences among industries, changes in accounting practice, and similar obstacles will persist. Even Sloan admits this.[21] Nevertheless, a much greater degree of uniformity than now exists should not be difficult to attain. This would be of considerable value to those investors who would take advantage of it and to the various analysts of the country including the rating agencies.

Despite such imperfections in corporate reports as have just been discussed, rating agencies generally rely upon the published statements of the corporation as the basic data upon which to conduct their "scientific analysis." This is, in fact, implied in the statement of one agency in its remark that

> In our previous editions of this book, we have commented unfavorably on the action of those companies that refuse to publish adequate statements of earnings and other important information in spite of the fact that their bonds or stocks have been sold to the public in recent years. We still feel that the time is coming when an essential accompaniment of every offering of securities that is expected to appeal to the intelligent investor will be an agreement between the borrowing company and the bankers that will make available to the security holders the vital figures as to the company's affairs not only up to the time of the security offerings but in subsequent years. Following our past policy, we have dropped from this year's volume, the Ratings of many securities of corporations that have discontinued making public their earnings figures and other essential data.[22]

Further evidence of this is found in the explanation of another agency that "with the bondholder's position outlined the

[20] *Ibid.*, p. 336.
[21] *Ibid.*
[22] *Poor's Ratings*, 1931, p. iv.

rating analysis proceeds to the earning power . . . and the financial condition as shown by the balance sheet." [23]

Intelligence, Training, and Facilities of the Raters.—The second assumption, that the rating agency is fit by intelligence, training, and facilities for the task of rating securities to the extent of furnishing "an authoritative key to the relative security and stability, from an investment standpoint, of all types of bonds and stocks," is one which it is extremely difficult to evaluate. There is some evidence that those individuals who are engaged in the rating process are above "normal" in intelligence. Many are college men. Presumably, however inexperienced, they have some training and aptitude acceptable to the agency employing them. That the degree of intelligence which these individuals display is adequate for successful rating, even under professional supervision, must remain a matter of conjecture.

Another aspect of this assumption lends itself only slightly more to inquiry. That is the question whether the individuals engaged in the rating process have had training designed to give them a proper understanding of the problems which are encountered. Certainly graduation from one of our colleges or universities cannot account for such gigantic acumen. Yet that is the qualification most frequently mentioned in discussing this question of training. Added, usually, are certain miscellaneous facts about the earlier experience of the members of the rating groups. Such experience as a rule involves some statistical work in a bank or bond house or security brokerage office or other organization dealing in securities. No information beyond this was forthcoming in answer to inquiries of the writer. Replies were more emotional than rational, for the rating organizations seemed to resent any question as to the fitness of their respective staffs for the tasks which they perform.

As to the agencies' facilities for rating, little can be said beyond the fact that much mystery prevails as to the sources of information (published reports excepted) and the manner

[23] The *Fitch Bond Book*, 1929, second unnumbered page following Introduction.

of obtaining it. The investor is advised that in addition to the published corporate reports some of the rating agency's information is from "unique sources" [24] and that the various factors taken into consideration come from "a vast store of investment news, gathered in our files and through information obtained by our personal representatives." [25] This general attitude is confirmed by John Moody, chief of the Moody organization, when he states, "I found . . . in working up a rating system, I would have to take into consideration every factor involved." [26]

Impartiality.—The third assumption, that the rating agency is thoroughly impartial, is as difficult to assay as its predecessors. There are no records of dishonesty, of corruption. Certainly such a record is not due to the lack of opportunity for dishonesty. As one agency has pointed out publicly, "it is possible that some of the ratings in this service may not be wholly pleasing to the companies concerned or to the individuals or banking houses selling the securities." [27] It is inconceivable, in fact, that any corporation should be pleased by a rating for any of its securities lower than that to which it considered itself to be entitled. It is of interest, though not startling, that when Standard "dropped [a certain company's] rating . . . officials of the company came to the office and objected strenuously." This is only typical of scores of such objections. No implication is intended that irregularity is attached to such protests. The point made is that such circumstances contain opportunities to depart from regularity should the rating agency vary in the slightest its policy of disinterested appraisal. The records of business, especially in recent years, point very definitely to the willingness on the part of some business men of prestige and affluence to resort to methods which are not generally acceptable. Plainly speaking, the rating agencies are in a position to receive many favors, either tangible or intangible, in return for a higher rating than would be other-

[24] *Poor's Ratings*, 1931, p. 3.
[25] *Ibid.*, p. 1.
[26] John E. Kirshman, *op. cit.*, p. 244, quoting a personal letter from Mr. Moody to Professor Kirshman.
[27] *Poor's Ratings*, 1931, p. 2.

wise assigned, as indeed, it has been alleged, has actually occurred. In the language of one investment banker, "After a heart-to-heart talk, they finally agreed to rate the issue [a certain "investment" grade], which, of course, helped enormously to sell the issue." There is however, no proof of such improbity.

Psychologically, a different problem is encountered. Complete impartiality is difficult to achieve. Human beings are subject to prejudices. Investors are known to have "pet" securities. That is, the investor is inclined to favor, for emotional reasons, a particular industry or enterprise or part of the country. In some cases it may be due to childhood association, family tradition, or sentiment. And although rating agencies probably do not have "pets," those who do the rating are nevertheless human. There is no such thing as a thoroughly objective human being. It is common opinion in Wall Street that one of the rating agencies is usually "high on rails" because the organization took root when rails were considered the best security in the country. And it is conceded everywhere, even in some of the rating offices, that one agency's rating sometimes influences another's. The subjective elements, therefore, are important ingredients in the gradings finally obtained. As Rose has remarked,

> Any scientific approach to the solution of investment problems must make reasonable allowance for the influence of personal prejudice. The mind, even at its best, is not an accurate recording mechanism; and in the field of investment there are perhaps more prejudices—more preconceived notions with less foundation in fact—than in any other line of endeavor to which man has addressed his intellectual faculties.[28]

Conscious life is, on the whole, subjective, and although science has succeeded in injecting a bit of the spirit of objectivism into a normally subjective race, the degree of objectivity remains relatively unimportant. Consequently, the raters are still subject to the influence of precedent, tradition, and sentiment, although it is probably true that there is a con-

[28] Dwight C. Rose, *A Scientific Approach to Investment Management* (Harper & Bros., New York: 1928), p. vii.

scious attempt among those who do the rating to overcome these influences.

Fineness of the Ratings.—Dependent, in part, upon such bases of judgment, the rating organizations proceed to derive qualitative values of many thousands of security issues. Many of the elements which together constitute the character of each issue are allegedly weighed in arriving at a decision on the quality of the issues, to roughly twelve degrees of fineness. Moody is content with nine separate qualitative ratings; Fitch assigns twelve; Standard uses fourteen symbols; and Poor indulges in as many as nineteen. This is to say that the rating agencies hold themselves out to the investor as authoritative judges of investment securities in from nine to nineteen degrees of quality. This statement needs to be qualified somewhat owing to the facts that Standard's last two of its fourteen ratings are practically never used and that Poor uses three symbols which may be called super-ratings, which are practically inapplicable to corporate securities, and four symbols which may be called sub-ratings.

In general, therefore, the rating organizations undertake to judge the quality of investment securities to approximately twelve degrees of fineness. The factors which form the bases of their respective judgments are, of necessity, a matter of intense interest.

Legal Standing of the Issues Rated.—Investigation reveals that all the agencies regard the security behind a bond as of primary importance. One agency assures the investor that the "legal nature of the debt" is properly noted.[29] In other words, the priority of lien, whether it is an open or a closed mortgage, whether there is chance of dilution through subsequent issue of bonds—all these matters are given a place in the weighing process. Another agency is even more definite in that it allows a maximum of "35%" of the rating "for mortgage position." [30] Some idea of where the rating process starts may be gathered from the statement that, "For bonds

[29] The *Fitch Bond Book*, 1929, second unnumbered page following Introduction.
[30] Standard's *Hand Book of Bond Values*, June, 1931, p. 7.

to be compared they must be grouped according to security. This is what the rating accomplishes." [31]

In some quarters it is considered that one of the rating agencies is too easily impressed by the mortgage position of the issue. It is of interest, however, and perhaps of great significance, that some of the well-posted financial lawyers confess that the indentures of bond issues are often so drawn that they have the semblance but not the substance of Aaa bonds and receive the Aaa rating. If the intent is present, less scrupulous lawyers are able at times to arrange an issue's provisions so that the less shrewd analysts of rating bureaus may be deceived by the ostensible conservatism and protective qualifications of the issue's framework. Consequently, an Aa bond or even an A issue sometimes may prove to be a better security than another issue which has received the Aaa rating because of its ostensible mortgage protection.

Earnings.—Another consideration of fundamental importance is the matter of earnings. Although no information is given as to what the raters consider good or poor earnings under particular conditions or average conditions, general statements are made, assuring the investor that the rating process has not omitted this important factor.

One way of expressing earnings with reference to the issue being studied is the *margin of safety,* being the amount of earnings left after the payment of the interest on a given issue and on all prior issues; sometimes the *factor of safety* is used, this being the ratio of earnings left to the amount required for the charge in question. Other ways of expressing the relation of earnings to interest requirements include *times interest earned,* the *earnings ratio,* and *earnings coverage.* Some people look to the ratio of interest charges to gross business.[32] In one case at least, the rating agency confuses *margin of safety* with *factor of safety.*[33] This same agency avows that, "Much attention has been paid to the Margin of Safety," [34]

[31] *Ibid.,* p. 6.
[32] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. 105, note 1. For a clear exposition of the methods of calculation of earnings coverage, see *Ibid.,* pp. 105-110.
[33] *Poor's Ratings,* 1931, p. 3.
[34] *Ibid.*

while another mentions simply "earning power," [35] and a third allows a maximum of "50%" for "earnings." [36]

In all cases the inference one draws is that the word "earnings" means past and perhaps present earnings. Fitch specifies earning power "past, present, and future," [37] while Standard considers a "forecast of immediate and long-term prospects." [38] What the latter uses for its forecast of future earnings is difficult to surmise, but this agency emphatically states that "Standard Ratings do not rest on 'opinion.' " [39]

Regarding the question of evaluating the earnings record and prospects, it is necessary to recall the great variances in accounting practice, as mentioned earlier in this chapter. In the utility field, for example, depreciation, an important element in the earnings record, is sometimes based upon gross earnings, sometimes upon physical wear due to age alone, and sometimes upon both. During periods of business stress, attempts may be made to calculate depreciation in terms of gross earnings so as to present as favorable a financial picture as possible or in terms of physical wear based upon time alone in order to present as unfavorable a view as possible—the assumption in the latter instance being that the utility managers have one eye on the rate structure and future rate making. It is clear, of course, that in either case, unless the rating agencies are aware of this manipulation and take cognizance of it, such accounting can easily affect the ratings assigned.

Although probably all the rating organizations consider past earnings, as measured perhaps by the average earnings over a period of years, only one agency (Poor) specificially states that it considers the trend of earnings. It is probably true, however, that no agency ignores it entirely. One of the criticisms sometimes made of the ratings is that they are, for the most part, historical. There is, in fact, some basis for this objection. Something of the historical element is brought to light when, in describing its Baa rating, Moody points out,

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[35] Moody's *Manual of Industrials*, 1931, p. viii.
[36] Standard's *Hand Book of Bond Values*, June, 1931, p. 7.
[37] The *Fitch Bond Book*, 1929, second unnumbered page following Introduction.
[38] *Standard Bond Descriptions:* Bond Bulletin Section, Vol. 7, No. 653 (May 27, 1933), Sec. 5, p. 2003.
[39] Standard's *Hand Book of Bond Values*, June, 1931, p. 7.

as to issues so rated, that "Statistically they may stand on a strong investment base, but they may be new and unseasoned issues, the permanent strength of which has not as yet been fully demonstrated." [40] In other words, the strength of the issue must be *demonstrated* before it is given the rating to which it may rightfully be entitled by virtue of its inherent soundness. What the demonstration consists of, whether the coverage of charges, the lack of default or the market record, such as the amount of fluctuation or the breadth of distribution or the character of the issue's ownership, is not divulged. Poor, however, goes to some length to impress the investor that the trend of earnings is even more important than the average earnings.

> What we term the "Trend" of the company's operations proves, in many cases, even more important than the Margin of Safety shown for a particular security. . . . It is obvious that even if the company has shown a good Margin of Safety for a certain security over a period of ten years, and an examination of the trend shows that the said Margin has decreased rapidly during the last three years, more weight should be given in the analysis to the "Trend" than to the Margin of Safety over the ten-year period.[41]

It is not to be inferred, however, that it is the sense of this discussion that the record of the past can be ignored or even submerged in the rating process. Both the trend of the past and the probabilities of the future are essential for a reasonably sound rating judgment. But concerning one particular type of estimate of future earnings by projecting trends, the warning of Graham and Dodd seems particularly appropriate:

> Financial theory . . . has sought to estimate future earnings by projecting the past trend into the future and then used this projection as a basis for valuing the business. Because figures are used in this process, people mistakenly believe that it is "mathematically sound." But while a trend shown in the past is a fact, a "future trend" is only an assumption.[42]

Nature of the Industry.—It is generally understood that all agencies consider the nature of the industry in which the

[40] Booklet: *The Investor's Key to Safety*, by Moody's Investors Service, p. 7.
[41] *Poor's Ratings*, 1931, pp. 3-4.
[42] Benjamin Graham and David L. Dodd, *op. cit.*, p. 36.

company is engaged, preference being given to some over others because of their monopolistic character or the inelasticity of demand for their goods or services.

Railway and public utility securities are normally credited with underlying stability not so generally assumed in the case of industrial companies, though the assumption of stability must be confirmed by the record and current position of the specific property and at times is negatived by unfair legislative treatment or regulation, by shifting population movements, or industrial changes in the territory served.[43]

A more exacting attitude is indicated in another agency's formula:

Exactly the same percentage is always allowed for the same element in every bond in the same class—railroad, industrial, or public utility.[44]

How important this preference of one industry over another is, the rating organizations neither state nor imply. Presumably they have secret formulae for determining the qualities of issues identical in all important respects other than type of industry. In view of the fact that the nature of the industry is a non-statistical factor, such a formula must of necessity represent an arbitrary judgment—Standard's statement that its ratings do not rest on "opinion" notwithstanding. Standard, in fact, is quite proud of the fact that "as far back as 1930" it foresaw the trend in the substitution of mechanical refrigeration for ice refrigeration and assigned commensurately lower ratings to ice issues.

Anent the long-term prospects of an industry, the remarks of Morris are pertinent.

As to . . . technological dangers, one of the New York banks recently reprinted a charming letter of investment advice from the Marquis de Lafayette. The two safest places he could think of for investment in 1832 were the Bank and the canal companies. The canal companies obviously had a safe and prosperous future. So had the city traction companies, thirty years ago, and the gas works, and the wagon factories. So had the makers of red woolen underwear. So had the importers of indigo and of dye-woods. In fact, a survey of the highest priced and most esteemed investments of any fairly

[43] The *Fitch Bond Book*, 1929, first unnumbered page following Introduction.
[44] Standard's *Hand Book of Bond Values*, June, 1931, p. 7.

remote period rather leads to the cynical conclusion that they usually achieved the greatest public favor just about the time when, for technological, social, or political reasons, they ought to have been sold rather than bought. To buy in 1935 any bond due in 1980, and to expect conditions at the end of its term to be the same as at the beginning, is surely the triumph of hope over experience.[45]

However much one may wish to quarrel with specific details of Morris' statement, his general thought, as well as that expressed early in this section, would seem to indicate that there is no such thing as a permanent investment, irrespective of the rating agencies' assertion that the long-term prospects of the industry have been carefully studied and considered.

Position Within the Industry.—The position of the company within the industry is also a matter of concern in arriving at the rating.[46] Whether this factor is measured by some objective standard is not conveyed by the explanations offered by the rating agencies. Whether said position is based upon size (as measured by capital, capitalization, units of production, sales, number of employees, total payroll, total assets) or control of some material or process, geographical location, age, or prestige is not disclosed. As a matter of fact, in the absence of uniform accounting and statistics, the status of an enterprise within a group may be difficult even to estimate. It sometimes happens that a thorough audit will disclose that an apparently strong organization has not only lost its relative position within the industry, but has actually reached a stage (through impairment of capital) where forced liquidation is required. In some instances, surveys conducted by accounting counsel preliminary to the drafting of industry codes under NRA, revealed extraordinary movements within an industry, which no statistical examination of the units would have turned up. It is known that in some cases size of one sort or another is given some weight in arriving at a rating.[47]

In addition to the factor of size of the company such allied matters are sometimes considered, as how well established a

[45] Ray Morris, "Investing under Difficulties" in the *Yale Review*, Autumn, 1935, p. 162.
[46] The *Fitch Bond Book*, 1931, first unnumbered page following Foreword.
[47] *Poor's Ratings*, 1931, p. 9.

market there is for the company's products or services, to what extent the company is subject to the stress of hard times, how much new competition is entering the field, whether new industrial processes are creating difficulties in adjustment, to what extent the company has any advantages in raw materials or transportation, to what degree it has been successful in dealing with labor problems, how long the present management has been in successful control, and to what extent the corporation has been cautious and at the same time progressive as well as consistent in its policies in general.[48] Acknowledgement must be made that the rating agency is to be congratulated on its willingness to aspire to expertness in each and every field of industrial activity to the consummation of judging with critical, far-seeing, and piercing eyes the wisdom of the company's policies, its degree of cautiousness, of progressiveness, its consistency. When one regards, even at a distance, the technological problems of a single corner of a single industry, one cannot be censured for harboring an active curiosity as to results attained by any individual or organization which has developed a system for passing judgment on the innumerable and complex problems of the constituent enterprises of the country's industrial structure.

Marketability.—Another factor sometimes referred to in the question of ratings is marketability. One agency is known to allow a maximum of "15%" for this quality.[49] Stated in its own language, "it often happens that the only reason for keeping . . . [A1 bonds out of the class of A1+ bonds] is a lowered factor of marketability." [50] Another agency, in describing a rating symbol, states that compared with bonds of the next higher rating those of this rating are sometimes "of similar security but less quickly salable." [51] Still another agency admits the factor of marketability when, in describing the elements upon which a certain rating is based, it states that "The factor of salability is also considered in assigning this

[48] The *Fitch Bond Book*, 1931, first and second unnumbered pages following Foreword.
[49] Standard's *Handbook of Bond Values*, June, 1931, p. 7.
[50] *Standard Bond Descriptions*, Bond Bulletin Section, Vol. 7, No. 653 (May 27, 1933), Sec. 5, p. 2004.
[51] The *Fitch Bond Book*, 1931, second unnumbered page following Foreword.

rating, and such bonds usually enjoy a high degree of salability, and possess a close and active market, whether listed on the Stock Exchange or not." [52] It is worth noting, however, that there is a growing feeling among students of investments that too much emphasis has been given in financial activities to the element of marketability.[53]

Recency of Issue.—Recency of issue is also a factor entering into the rating, as pointed out by Fitch in its statement that a certain rating is often given to bonds which are "of relatively new issue, and while promising, are not yet eligible for a higher group." [54] This point of view is substantiated by Moody in its explanation that a certain rating is often assigned to "Many unseasoned issues of strong companies. . . ." [55]

This practice finds some support in a study by Edwards and others which purports to show that bonds of more recent issue had a poorer record to 1932 than those of earlier issue.[56] But the findings of the Edwards study are not entirely conclusive on this point, for some of the defaulted issues of earlier years are evidently not included in the study; in other words, among the old bonds, only the surviving issues are included.

Banking Relations.—Among the non-statistical factors considered by the rating agency are the banking relations of the corporation.[57] How important the rating agencies consider the banking affiliation they neither state nor imply. Nor do they indicate how they determine the various degrees of goodness of investment banking houses. Several avenues of approach are available for such measurements, such as the default record of the particular house's sponsored securities, and the market value record—all such tests, of course, being relative to the number and size of the issues floated by the house.

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[52] *Poor's Ratings*, 1931, p. 8. It should be mentioned that Poor also treats salability separately and publishes special "salability ratings."

[53] For example, see: Benjamin Graham and David L. Dodd, *op. cit.*, p. 99; Lawrence Chamberlain and George W. Edwards, *The Principles of Bond Investment* (Henry Holt & Co., Inc., New York: 1927), p. 19.

[54] The *Fitch Bond Book*, 1931, first unnumbered page following Foreword.

[55] Moody's *Manual of Industrials*, 1931, p. viii.

[56] George W. Edwards *et al.*, "Bond Behavior in a Depression Period" in the *Journal of Business of the University of Chicago*, Vol. 6, No. 2 (April, 1933), pp. 132-138.

[57] The *Fitch Bond Book*, 1931, second unnumbered page following Foreword.

It does not appear likely, however, that any such tests are employed in determining the value of banking affiliations: human nature arrives at a subjective judgment with greater ease, lower money costs, and no auditing.

Miscellaneous Considerations.—Included in the rating agencies' estimation of investment quality of bonds is a number of additional factors. These may include: the size of the obligation relative to assets and to other capital issues; whether the issue has been assumed or guaranteed; whether there is a sinking fund, and, of course, its specifications; whether the bond is callable, and what the call and purchase policy of the company has been; how the net working capital stands (or stood) with reference to other financial factors; how large the floating debt is; and sundry factors of similar nature. Also included is the matter of how close the maturity of the issue may be. An attempt at clarification of ". . . the elements that are likely to enter into the consideration of bonds when they are being rated," [58] is made by Gerstenberg, who offers a list of 51 factors, as follows: [59]

PHYSICAL FACTORS

1. Properties held
2. Properties owned in fee, or leased
3. Location and extent of same
4. Indispensability of same
5. Land, timber, or mineral reserves
6. Plants, buildings, and improvements
7. Physical condition of plants or lines
8. Rates of natural depreciation
9. Obsolescence—rates of
10. Inventories, marketability of
11. Original cost minus depreciation
12. Reproduction cost
13. Mortgage security, first, second, or third
14. Collateral security
15. Assets, salability of

[58] Charles W. Gerstenberg, *Financial Organization and Management of Business* (Prentice-Hall, Inc., New York: 1932), p. 356.
[59] *Ibid.*, pp. 357-358

FINANCIAL FACTORS

16. Earning power of physical assets
17. Earning rate on given bond
18. Net earnings, stability of
19. Depreciation charges, sufficiency of
20. Reserves for depreciation, amount of
21. Reserves for contingencies
22. Working capital, sufficiency of
23. Current assets, ratio to current liabilities
24. Debt expansion, rate of
25. Earnings put back
26. Receivables, collectibility of
27. Revenues, stability of
28. Maturities, provision for
29. Sinking funds, amount of
30. Sinking funds, contingent or positive
31. Interest and dividend records
32. Capital changes, frequency of
33. Equities, market value of

INTANGIBLE FACTORS

34. Corporate architecture, strength of
35. Control of subsidiaries, now held
36. Guarantees by indorsement or by agreement
37. Franchises or licenses, nature of
38. Control held by Stockholders or by bankers
39. Affiliation with banks and bond houses
40. Management, efficiency of
41. Rates or prices received
42. Political risks involved in same
43. Stability of rates or prices
44. Competition, intensity of
45. Margin of profit, sufficiency of
46. Margin of profit, stability of
47. Ability to withstand depressions
48. Labor trouble risks
49. Products, stability of demand
50. Restrictions upon further bond issues
51. Trusteeship, character of

Gerstenberg points out, however, that "The list was originally compiled by Moody's Investors Service, which, however, states that it 'is hardly indicative of our rating policy.' " [60]

[60] *Ibid.*, p. 356, note 29.

Conservatism versus Accuracy. It is obvious that one cannot pursue a deliberate policy of conservatism and at the same time expect to attain complete accuracy. Conservatism in assigning ratings implies the practice of rating lower than the facts would justify. Yet all the agencies claim conservatism, and accuracy is always implied, if not definitely claimed. Poor, in assuring its subscribers of its purpose to be cautious, states that

> It is our desire . . . in assigning ratings to be conservative, rather than liberal, since we have in view, primarily, the interests of the investor, although this fact has not lessened the value of the Service to sellers of securities. The primary purpose of these ratings, however, is to make them of value to the actual purchaser of securities for investment, whether the private investor, or the savings bank, trust company, or other institution.[61]

It is generally conceded among investors that the ratings are conservative, and this attitude is reflected even in the literature of investment. In one periodical's financial columns the reader is assured that ". . . Moody's ratings are conservative —ultra-conservative, perhaps—but if this is a fault it is a good fault in so far as investments are concerned." [62] This periodical, in fact, carries a section for discussion of investment affairs, for questions from readers and answers to them regarding particular investments. This financial department has habitually made use of Moody's ratings "Because they are conservative and comprehensive. . . ." [63]

If it be granted that the ratings are conservative, it is difficult to correlate with this proposition Moody's claim that the rating process has been "perfected" [64] or with Dice's acceptance of the proposition that Moody's rating system has been "perfected," [65] unless they mean "improved," or even with the Twentieth Century Fund's assertion that "the standard of accuracy is unquestionably high." [66] And it appears to be en-

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[61] *Poor's Ratings*, 1931, p. 2.
[62] "Rating Investments," in the *Outlook*, Vol. 133, March 14, 1923, pp. 502-503.
[63] W. L. Stoddard, "Moody's Ratings," in the *Outlook*, Vol. 130, August 25, 1925, p. 596.
[64] Moody's *Manual of Industrials*, 1931, p. v.
[65] Charles A. Dice, *The Stock Market* (McGraw-Hill Book Co., Inc., New York: 1926), p. 582.
[66] Twentieth Century Fund, Inc., *op. cit.*, p. 140.

tirely at variance with Standard's assertion that "These ratings are scientifically accurate."

Conservatism may be defined as the application of caution and, in the present instance, a leaning to the less favorable of the probabilities, whether it be less good in a very favorable situation or less poor in a very unfavorable one. Accuracy, on the other hand, connotes exactness or precision. One cannot, therefore, be both conservative and accurate in the same appraisal at the same time.

It must be clear, despite the assertions of rating agencies relating to the "perfection" of the system or its "scientific" status or the allegation that the ratings "do not rest on opinion" or the pronouncement of "accuracy," that bond ratings are indisputably matters of judgment even though such judgments may be based in part upon statistical or mathematical formulae. As stated by a federal agency in connection with rating the risk involved in specific mortgages on residences and other properties on a much coarser rating scale than that used by the security rating agencies, "The system [of mortgage risk rating] does not supplant the need for the use of sound judgment for at every step in the risk-rating process the individual must call his judgment into service." [67]

The fact that two or more rating agencies may disagree as to the proper rating to be assigned to a specific issue, may be due to their disagreement as to the qualities which a bond of a given standing should possess, or it may be due to their disagreement over the relative importance which should be assigned to each of the bond's characteristics, or it may be due to a difference in their opinions as to how much of each of these qualities is to be found in a given issue, or to a combination of these differences.

Moody, for instance, disagrees slightly with other agencies as to the qualities of bonds of very low standing. Standard, on the other hand, attributes much more importance to marketability than do the other agencies. It may reasonably be inferred, since the rating agencies agree that their symbols are equal for all practical purposes; and since some of the agencies

[67] Federal Housing Administration, *op. cit.*, Pt. I, Par. 617.

concede that the rating is, in part, a matter of opinion; and since some of the rating officials admit that occasionally they may have overestimated or underestimated the strength of a given issue, that it is extremely improbable that four rating agencies acting independently of each other should agree as to the exact, or even the approximate, strength of a given bond.

The conclusion is unavoidable, therefore, that bond ratings are largely matters of personal judgment rather than accurate and scientific conclusions based upon impersonal observations.

CHAPTER 5

BOND RATING SYMBOLS

So vague are the conceptions which many investors have of the meanings of rating symbols that some space should be devoted to a brief discussion of the symbols.

Probably the chief reason for the vagueness of investors' understanding of rating symbols is the likelihood that most investors are unwilling to take the trouble to study the explanations of the symbols. The safety of thousands of dollars may be involved, but the American investor is often ready to jump to conclusions on matters which are boresome. He believes that the meanings are obvious and risks his funds accordingly. He is inclined to liken the necessity of reading the explanations of the symbols to the task of reading the fine type in a printed contract.

Official Explanations.—Aware of this tendency, all four of the principal rating agencies publish concise explanations of their symbols as well as more detailed ones. The most concise explanation is given by Standard when it states that, "An A1+ bond is one that has been given the maximum percentage allowance. . . . The other ratings signify varying percentage deductions from this maximum." [1]

Aside from one- and two-word descriptions, Standard offers in the rating book commonly used by Standard subscribers no further explanation of the meanings of the symbols. More detailed descriptions of Standard symbols are offered in another place.[2]

Abbreviated Descriptions.—Some of the short descriptions consist of one or two words, others of one or two concise sentences. In all cases one to four words are sufficient to

[1] Standard's *Hand Book of Bond Values*, June, 1931, p. 7.
[2] *Standard Bond Descriptions*, Bond Bulletin Section, any issue.

convey the meaning desired. These abbreviated descriptions are shown in Table 1.

It is obvious from this table that the rating symbols are not exactly identical in extent or in meaning. Notice should be taken of the fact that Moody extends only through C,

TABLE 1. ABBREVIATED MEANINGS OF RATING SYMBOLS

Fitch [a]	Moody [b]	Poor [c]	Standard [d]
		A***** U. S. Government A**** Other "impregnable" obligations A*** "Very highest"	
AAA "Highest"	Aaa "Highest"	A** "Very High"	A1+ Highest class
AA "High"	Aa "High grade"	A* "High"	A1 High grade
A "Sound"	A "Sound"	A "High"	A "Sound"
BBB "Good"	Baa "Good"	B** Good "business risk"	B1+ "Good"
BB "Good"	Ba "Fair"	B* "Fair"	B1 "Fair"
B "Speculative"	B "Speculative"	B "Uncertain"	B "Semi-speculative"
CCC "Good speculation in readjustment"	Caa "Very speculative"	C** "Speculative"	C1+ "Speculative"
CC "Good speculation in readjustment"	Ca "Weak"	C* "Highly speculative"	C1 "Highly speculative"
C "Fair speculation in readjustment"	C "Gambles"	C "Extremely hazardous speculation"	C "Uncertain"
DDD "Low"		D** "Practically inappreciable"	D1+ "Weak"
DD "Small"		D* "Practically valueless"	D1 "Very weak"
D "Slight or nil"		D "Practically valueless"	D "Doubtful value"
X Not rated		E "Not ratings in the F strict sense of the G word" H	E "Little value" F "Little value" * Conditional rating

[a] The *Fitch Bond Book*, 1931, first unnumbered page following Foreword.
[b] Moody's *Manual of Industrials*, 1931, pp. viii-ix.
[c] *Poor's Ratings*, 1932, p. 12.
[d] Standard's *Hand Book of Bond Values*, June, 1931, every even-numbered page from 12 through 342.

while Fitch, Poor, and Standard range at least through D; that Poor includes three super-ratings which are practically inapplicable to corporate securities and are of no concern in this study. Poor also includes four sub-ratings which, as is pointed out, are "not ratings in the strict sense of the word" and are used only "relatively" for securities which, in Poor's opinion, are of practically no value, the sub-ratings connoting

theoretical rights. Standard includes two sub-ratings representing "little value." Both Poor's and Standard's sub-ratings rarely make an appearance.

That rating symbols are not exactly identical in their meanings is true only if identity is taken to mean the use of the same words in the description. Their meanings for practical purposes, however, are so nearly identical that they are accepted by practically everyone as equivalent. In fact, an "A" bond is generally understood to be an A bond in any system. Even the rating agencies themselves recognize this. It is understood by investors in general as well as by the Federal Reserve banks, the Comptroller of the Currency, and State Banking superintendents, and it appears as well in the literature of finance.[3] A tabulation of the widely accepted interpretation of the ratings of the several agencies is given in Table 2. In this tabulation Poor's super-ratings and Poor's and Standard's sub-ratings are omitted.

TABLE 2. SYMBOLS OF THE PRINCIPAL RATING AGENCIES

Fitch	Moody	Poor	Standard	Majority Interpretation
AAA	Aaa	A**	A1+	Highest
AA	Aa	A*	A1	High
A	A	A	A	Sound
BBB	Baa	B**	B1+	Good
BB	Ba	B*	B1	Fair
B	B	B	B	Somewhat speculative
CCC	Caa	C**	C1+	Speculative
CC	Ca	C*	C1	Highly speculative
C	C	C	C	Extremely speculative
DDD		D**	D1+	Low or weak
DD		D*	D1	Small or very weak
D		D	D	Practically valueless

From AAA through BB (Fitch symbols) at least three of the four agencies agree on the exact word used in the majority interpretation above. From B down the words used in the majority interpretation are the author's translation of

[3] Charles A. Dice, *The Stock Market* (McGraw-Hill Book Co., Inc., New York: 1926), p. 584.

such terms as "weak," "practically inappreciable," "doubtful." An almost identical table which, however, also includes stock ratings, is shown by Dice.[4]

It is difficult to tell which of the agencies is "most conservative." Conservatism in rating, it would seem, may be approached from two points of view. The actual rating given to particular issues is one. It may be found, for example, that a certain issue is reported as of the highest rank by three of the agencies and as of the second highest by the fourth agency. This would seem to indicate that the fourth agency was more conservative in so far as this issue was concerned. But it might mean that the fourth agency underestimated the real value of the issue. There is the further doubt as to the meaning of conservatism. Does conservatism always imply the assignment of a rating lower than that which is justified? In the case of an issue found to be in difficulty, three agencies may rate it B, a fourth one D. Is the fourth agency more conservative or otherwise?

The other approach would seem to be an examination of the meanings of the ratings, as shown in the abbreviated table. Such an inspection, however, reveals nothing. The various agencies reach the words "speculative," "good," etc., at about the same levels, and there is always the question whether the respective organizations place the same interpretations on such qualitative terms. It is impossible to state from an examination of this kind which agency is the most conservative.

Diversity of Symbols.—Because these four sets of rating symbols lead to confusion in the minds of their users it would seem to be a matter of sensible procedure for rating agencies to agree on a set of uniform symbols as well as on uniform meanings. Certain advantages would accrue to the rating agencies from such agreement.

It is clear that this suggestion is made on the assumption that the ratings, as they are now used, are approximately equal in scale. It is generally understood, for example, that the ratings AA (Fitch), Aa (Moody), A* (Poor), and A1 (Stand-

[4] *Ibid.*

ard) are equivalent, that the ratings BBB (Fitch), Baa (Moody), B** (Poor), and B1+ (Standard) carry the same respective meaning. Certainly that is the understanding of the United States Comptroller of the Currency, the Federal Reserve banks, the various state banking and insurance commissions, and investment trusts. Confirming this point, one of the largest investment trust organizations writes that Standard assigns the ratings B1+, B1, and B to certain classes of issues, that "Moody rates similar issues Baa, Ba, and B," while Fitch rates such issues BBB, BB, and B." [5] Essentially similar confirmation is to be found in the literature of finance. Badger and Guthmann, in an adapted table, use "composite ratings" which were obtained by averaging the ratings of Fitch, Moody, Poor, and Standard.[6] The same process is used by Reierson in his study of public utility securities.[7] Dice likewise refers to the ratings of the several agencies in terms of equivalence.[8] Indeed, the rating agencies themselves acknowledge this interpretation to be a proper one.

It is plain that if an agreement as to uniformity were reached and the uniform symbols and uniform meanings were published in the rating manuals, a far better understanding of the ratings would gradually come to exist among investors. As a result those investors who now use the ratings would probably use them more, and those who do not now use them because of existing uncertainty would tend to adopt them.

Only three disadvantages of such a plan are apparent. First, those investors who understand the symbols of one agency might, if the symbols of all agencies were the same, experiment with the ratings of the others, and a customer might thereby be lost. Second, a system of uniform symbols might lead to the use of all four agencies' opinions so that less reliance would be placed upon the published ratings of any one agency. And finally some agencies might feel that comparison of results might not be a healthful aid to their business. If a

[5] Personal letter from E. M. Matalene, Statistical Department, Distributors Group, Inc., New York, dated June 5, 1933.

[6] Ralph E. Badger and Harry G. Guthmann, *Investment Principles and Practices*, (Prentice-Hall, Inc., New York: 1936), p. 66.

[7] Roy L. Reierson, *Measurement of the Price of Public Utility Capital:* 1919-1933, p. 117. An unpublished doctoral thesis, Northwestern University, 1935.

[8] Charles A. Dice, *op. cit.*, p. 584.

given bond were rated AA by three agencies and A by one, and the bond turned out to be inferior to other bonds of the AA grade, the investor who had observed this difference and the outcome might easily reach the conclusion that the agency that assigned the lower rating had shown better financial judgment. If, on the other hand, this bond had done substantially better than other bonds of its alleged class, the investor might conclude that the agency assigning the lower rating had failed to foresee the excellent qualities of the issue. It is true, of course, that even without the existence of uniform symbols any investor could make such observations, but some investors of the more casual than careful type would be more inclined to do so with their observations thus slightly facilitated.

From the point of view of investors there are no disadvantages, and much is to be gained from such a plan. That being so, it is surprising that no concerted agitation for the adoption of this reform has occurred. One of the obstacles in the way of the adoption of such an agreement would be the matter of which set of symbols to use. Each agency is jealous of its own.

Concerning the desirability of such uniformity, one of the agencies is silent. One is definitely opposed to such a procedure, and two are favorable.

As to which set of symbols should be used in case of such agreement, one agency is silent, one is committed to its own ratings (which, it advises, are copyrighted), and two are open to the suggestion that the Fitch symbols are probably the simplest and, therefore, the most readily understood.

One way of circumventing this difficulty would be to devise an entirely new system but incorporating the old. Such a device, if accepted, would require all the agencies to change at the same time, and probably with little, if any, injury to any of them. This revision ought, for practical reasons, to adhere as closely as possible to the more or less common practice now in vogue. Otherwise, an entirely new arrangement would be required, involving a greater degree of adjustment by those who use the rating as well as, perhaps, a more complicated system. Indeed, a uniform and non-partisan system, if it is to

have a chance of general acceptance, must be based upon the present system of three-letters-to-a-class or at least three-grades-to-a-class.

The present writer is inclined to recommend the adoption of the latter. What this means, in effect, is that a set of uniform symbols must involve three grades of investment quality within the fundamental letters, A, B, C, and possibly D. Consequently a uniform set would involve such combinations as A++, A+, A, or AA, AB, AC, or A+, A, A–

This is the more desirable system primarily because it is the simplest; but also because it is identical with a system of grading scholarship as now and heretofore quite generally used in the school system of America from primary grades through the universities. This system would accept the letter and plus mark as the superior emblem of the letter-group, and the letter and minus mark as the inferior insignia. The investor should have no difficulty in understanding that an A+ bond was superior to an A bond, that an A bond was better than an A– bond, that an A– bond was more desirable than a B+ issue.

By this means the identical symbols of none of the rating agencies would be retained. No one of the rating agencies would have any more to lose than any of the others. Investors throughout the country would have much to gain. Because no agency would retain its own system to the detriment of the others, and because investors would gain through better understanding, the rating agencies themselves would profit over the long period. Investors would be better satisfied, and the investors' interests would be better served.

It is also proposed by the present writer that rating agencies discard the twelve-symbol system now in use in favor of a nine-symbol system, an arrangement which one of the agencies (Moody) already has. Inspection of the ratings assigned to specific bonds reveals the fact that the tenth to twelfth ratings (the D's group) are almost never used anyway. It is so difficult to ascertain the investment standing of a bond after it has passed the B's group in ratings that it seems to be a fruitless labor to attempt to classify bonds of lower standing than

B in six separate categories. It would, indeed, be an accomplishment to do it accurately in three categories.

The principle upon which this suggestion is based is that succinctly stated by Symonds (with reference to the rating of personality traits).

> Naturally one wishes in any measurement to use as fine a scale as possible, but just as in physical measurements it is useless to use a scale finer than the limits of one's eyesight or finer than the definitions of the object to be measured, so in psychological ratings it is useless to use a scale finer than the judge's ability to discriminate or the definiteness of the trait in the subject.[9]

But it is obvious that much of whatever value there may be in the ratings would be lost if the scale were made too coarse, that is, if the number of rating symbols were made too few. It is believed, however, that a nine-symbol system would be about as effective as the present twelve-symbol system despite its greater simplicity. This suggestion, a nine-symbol system, if carried out, would make the present C the lowest rating for all the agencies.

Summarizing the above recommendations, it is proposed that all the rating agencies adopt the set of uniform symbols and uniform meanings shown in Table 3.

TABLE 3. RECOMMENDED UNIFORM SYMBOLS AND UNIFORM MEANINGS FOR BOND RATINGS

Symbol	Meaning
A+	Highest grade
A	High grade
A—	Sound
B+	Good grade
B	Fair grade
B—	Speculative
C+	Very speculative
C	Dangerous
C—	Little value, if any

[9] Percival M. Symonds, "On the Loss of Reliability in Ratings Due to Coarseness of the Scale," in the *Journal of Experimental Psychology*, Vol. 7, No. 6 (December, 1924), p. 457.

CHAPTER 6

STATISTICAL PROCEDURE

Use of Statistical Data.—It was stated in Chapter 1 that one of the purposes of this investigation was to ascertain how well the rating agencies perform their important task.

> Do AAA bonds afford the investor greater protection than the bonds of any other rating? Do BBB bonds stand up better than BB bonds? What is the record of the ratings from a market action point of view? Certainly these are legitimate questions for the investor to ask.[1]

In order to answer these questions, it is necessary to attack the problem from several angles. These relate to the market action of bonds, to their yields, to the default record, and to rating changes. It is essential, therefore, to study the record of the rating agencies and of the bonds they rated over a specific period.

Stocks or Bonds.—It is obvious that in the process of rating a security there is a vast difference between a bond and a share of stock. One is a creditor instrument; the other is a certificate of ownership. In liquidation a bond has certain rights which give it special privileges. Even in the ordinary course of business the bondholder has a claim against the assets of the business for interest whether earnings are sufficient to cover the interest or not (income bonds excepted). This position is expressly stated by one of the rating agencies when it points out that, "The difference between a bond risk and a stock risk is a cardinal one." [2] And, of course, all the rating agencies recognize it.

It is an accepted principle, therefore, that bonds and stocks are non-comparable. Bonds were chosen for this study be-

[1] Gilbert Harold, "Do Bond Ratings Forecast the Market?" in *Barron's*, Vol. XIV, No. 53 (December 31, 1934), p. 7.
[2] Moody's *Analyses of Investments: Industrials*, 1923, p. viii.

cause of (1) their relative simplicity (excepting income bonds and participating bonds, a definite rate of return is involved; face value, except in very rare cases, is a round sum stated in multiples or fractions of 100; and, excepting serial municipal and equipment issues, market value is always expressed as a percentage of face value); (2) the fact that much more serious attention is given to bond ratings than to stock ratings. Such other factors as the availability of definite yields on bonds [3] and the possibility in stocks of stock dividends and stock subscription rights [4] seal the case in favor of bonds.

Kinds of Bonds.—It is also obvious that there is little or no comparability between corporation bonds and similar obligations of governments, the former being dependent upon business enterprise, the latter upon taxation, for their means of payment. For this reason alone it appears desirable to exclude one group or the other.

A further reason is found in the fact that of the four rating agencies two (Fitch and Standard) do not include state, county, municipal, or district issues, and of these Standard omits also both United States and foreign government bonds. Of the two agencies (Moody and Poor) which do include both governmental and corporate issues, one (Poor) sets up a group of what may be called super-ratings which are intended to indicate that the obligations of some governments are far superior to the obligations of any corporations. These super-ratings are given sparingly. According to Poor's statement, the highest rating (A*****) is accorded only to United States Government obligations,[5] probably regarded by most Americans as the premier obligation of the world. Poor considers them "the best the market affords as to safety of principal and interest." [6] The next lower rating (A****) is applied to such obligations as those of the Dominion of Canada.[7] The next lower rating (A***) is assigned to various strong govern-

[3] Yields on stocks are indefinite, since dividend payments are, in general, at the discretion of directors and vary from time to time.

[4] Although found in some issues, the right of bondholders to participate in stock subscriptions is very rare.

[5] *Poor's Ratings*, 1931, p. 12.

[6] *Ibid.*

[7] *Ibid.*, p. 25.

mental issues and on very rare occasions to corporate issues.[8] Typical of the issues receiving this super-rating are the obligations of the Commonwealth of Massachusetts.[9]

Of the two agencies which do include both governmental and corporate obligations, Moody does not, in the printed ratings, distinguish between United States or other governmental obligations and corporate issues of highest quality. Both general types receive Moody's highest rating (Aaa). In that way, United States of America 10-30-year Panama Canal Loan Gold 2s-1936 were rated as of the same quality as S. S. Kresge 5s-1945 and Lehigh Coal and Navigation 4s-1948 and a host of others.[10]

In view, then, of the exclusion of governmental issues by two of the four agencies and of the widely different character of corporate and governmental obligations, one of these groups must be excluded. Corporate issues were chosen for this study in preference to governmental issues because they are rated by all the principal agencies and because they appear to offer greater opportunities for fruitful investigation.

Period of the Study.—An important consideration in the statistical phases of this study is the period over which the tests are conducted. Several important points are involved. The length of the period, its character, and the factor of recency—all these play a part in the selection of the time interval of the inductive study.

It is obvious that the period should be short enough to be workable, but not so short that the significance of the findings is lost. A very short interval, furthermore, might be unfair to the rating agencies. It is also obvious that the period should not be too long.

Another consideration is the nature of the period. Should it be one of relative equanimity in the bond market? Should it be a period of rising bond prices, of declining prices, of stable prices, or should the period include all phases of price changes? The results of a study of one may be quite differ-

[8] *Ibid.*, p. 12.
[9] *Ibid.*, p. 98.
[10] Moody's *Manual of Governments*, 1931, p. civ, and Moody's *Manual of Industrials*, 1931, pp. clvi and clviii.

ent from the results of a study of another. And if the period be one of rising or of falling prices or of both, should it be one of slow or of rapid change?

In this matter of the character of the period lies an important consideration. Any well-organized financial statistical organization probably can rate bonds with fair accuracy under ordinary conditions. But it is open to question whether such organizations are able effectively to protect the investor, at least relatively, when the need for such assistance is greatest. On the other hand, if a violent period is chosen, it might be asserted that such conditions are completely abnormal and that consequently measures of bond performance as a test of the success of ratings would be unfair to the ratings and to the raters. Counter argument on this point would offer the analogy that if anchors on ships gave way under stress of an extremely severe storm it could hardly be claimed that that particular storm was not a fair test of the anchors. Especially would this be true when the test was to determine, not whether anchors failed to hold ships, but rather whether anchors of allegedly higher quality held longer or better than anchors of supposedly inferior quality. Certainly, in severe economic stress bonds of high ratings should weather the storm better than those of low ratings. And it is from such a period that the ordinary bond investor is able to obtain his most valuable exprience. Indeed, it is the conservative investor, according to Graham and Dodd, who will require the record of the recent collapse and others of earlier years as a constant reminder of the fact that investment in fixed-value investments should be approached "from the viewpoint of calamity."[11]

> The rule that a sound investment must be able to withstand adversity seems self-evident enough to be a truism. Any bond can do well when conditions are favorable; it is only under the acid test of depression that the advantages of strong over weak issues become manifest and vitally important.[12]

Finally, it is obvious that as recent a period as it is possible to use is the most desirable. The more distant the period, the

[11] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. viii.
[12] *Ibid.*, p. 76. For further discussion of the same point, see *Ibid.*, p. 6.

less valid is its application to present circumstances, for experience and growth have contributed to the rating agencies' intimate acquaintance with the problems involved.

On the basis of these considerations the period chosen was that of the middle of July, 1929 to the middle of July, 1935. This interval is one in which practically every type of price change was manifested, and its length is approximately that which is customarily contemplated by many investors.[13]

Selection of Issues.—The selection of issues for testing is limited to those for which quotations are available. Exact prices are desirable. Bid and asked quotations are apt to be unsatisfactory, for they quite often differ markedly from actual prices when sales are consummated. In view of the desirability of exact prices and of bonds which are widely held and of bonds having a reasonable amount of activity, it was decided to confine the study to issues traded on the New York Stock Exchange and the New York Curb Exchange.

Such a selection based upon comparable quotations over a period of years yields a list in which rails and utilities predominate (see Table 4). Such a list appears at first glance

TABLE 4. DISTRIBUTION OF 363 BONDS BY INDUSTRIES

Group	Number	Per Cent
Railroads	151	41.6
Public Utilities	129	35.6
Industrials	76	20.9
Finance and Real Estate	7	1.9
Total	363	100.0

to be unbalanced and therefore not very satisfactory for statistical analysis. Nevertheless it does afford a representative cross-section of the market. Furthermore, since the railroads and utilities are strictly regulated, their securities are more accessible to inquiry and their trends presumably more pre-

[13] The selection of the mid-July date was perhaps not the best one for convenience in the collection of the data. The annual rating manuals of Moody and of Poor are published at different times in the year, some before and some after the middle of July.

dictable. These are factors favorable to the success of rating. This should be borne in mind in the discussion of subsequent chapters.

An examination of bond quotations in *The Wall Street Journal* for July 16 (the middle day of the month) in each year from 1929 through 1935 yielded only slightly more than 100 bonds on both the New York Stock Exchange and the New York Curb Exchange for which prices were available on each of the seven annual dates. In view of this condition, it was necessary to extend the acceptable quotation date back to include the next preceding sale within one week prior to the effective date,—this procedure on the ground that the quotations obtained represented the latest sales and were therefore the most authoritative quotations on the effective dates. In most cases quotations were obtained either on the effective dates themselves or within one to two days prior thereto.

The most convenient source of quotations on this basis is *The Fitch Bond Record*, which is issued weekly on Tuesdays. The quotations obtained were the latest available at the middle of July in each year. The effective quotation dates on this basis were July 15, 1929; July 14, 1930; July 20, 1931; July 18, 1932; July 17, 1933; July 16, 1934; and July 15, 1935.

From this source the testing issues selected constituted the entire population of eligible bonds traded on the New York Stock Exchange and the New York Curb Exchange for which sale prices were available on the specified dates or at any time within one week prior thereto. The final list totaled 363 issues.

This list was used without alteration or substitution throughout the entire period of this study. However, in 1935, five bonds of the original list were called for redemption prior to the mid-July date. But with one exception, the call-date in each instance was so near the middle of July, that no important statistical error was involved in using them for the various yield, market price, and default tabulations. The fifth issue, retired February 25, 1935, was not omitted from the computations, but due notice of its altered status was made. This group of called bonds comprises:

Chicago Union Station	6½s	—1963, called for July	1, 1935
General Petroleum	5s	—1940, called for Feb.	25, 1935
Norfolk & Western	4s	—1944, called for July	1, 1935
Southern California Edison	5s	—1951, called for July	1, 1935
United Biscuit	6s	—1942, called for June	22, 1935

It is noted also that three issues were called prior to mid-July, 1935, the effective dates, however, having been somewhat later. These three issues are:

Western Electric	5s	—1944, called for October	1, 1935
Souhern California Edison	5s	—1952, called for September	1, 1935
Armour (Del.)	5½s	—1943, called for September	9, 1935

The significance of the word "eligible" used above is found in the specifications of some bonds. Many bonds, for example, carried maturities so early as to cause their disappearance from the market before the end of the study period or so early as to make their impending maturity an important factor in their market behavior. The earliest maturity accepted for this study was 1940. Bonds having special privileges or conditions such as participation features, income-bond stipulations, foreign incorporation, convertibility, stock purchase warrants, etc., were eliminated.

The resulting list of bonds included in this study is given in Appendix A.

Market Data.—Price quotations, then, were taken from the respective issues of the *Fitch Bond Record.* Yields to maturity were taken from the same sources when available. In those cases of very high yields (above 15.0%), the *Fitch Bond Record* omits their computation but mentions that the most recent interest coupon has been paid. In such cases yields were obtained from bond value tables computed to include yields up to 50%. It is understood, of course, that common practice regarding yield computations involves an assumption as to the discount rate. In the words of Lyon,

> We could assume an arbitrary rate. . . . Any such assumption would, however, be arbitrary and would not represent anything actually happening. In the case of the discount bond we can conceive something as actually happening. We can conceive of the semi-an-

nual amount, whatever it is, as being invested in the bond itself and producing an income of the unknown quantity we are seeking, namely, whatever compounded return the bond itself yields.[14]

Interpolation was practiced to the point of reasonable accuracy such as the alert bond trader (but not necessarily the exacting mathematician) would recognize. In the few cases of yields in excess of 50%, yields were computed algebraically with the same degree of accuracy as described above, but the resulting bases were so high that their significance would be open to considerable doubt. In the language of investment mathematicians, these would be purely "academic"—that is, they would be mathematically correct but, in practice, inapplicable. In those few cases, therefore, the common investment practice of using "current return" was employed in place of the computed yields. This was done for the bonds in Table 5.

TABLE 5. BONDS OF EXTREME YIELDS IN 1932

Company	Issue	Price	Current Return July 18, 1932
Denver & Rio Grande Western	5s —1955	7	71.45
Francisco Sugar	7½s—1942	15	50.00
National Public Service	5s —1978	9⅛	54.80
Norfolk Southern	5s —1961	5	100.00
St. Louis Gas & Coke	6s —1947	8	75.00

In cases of default, in which instances there was no yield, note was made of the fact.

Ratings.—Since the ratings assigned to specific issues by the several agencies do not ordinarily differ materially, it might appear to be sufficient to subject the testing portfolio to examination using the ratings of only one of the rating bureaus. Such a plan of attack, however, would involve the choice of one of the four agencies. On what basis such a choice could be made is difficult to decide. Should the choice be the ratings of the oldest agency, of the one most used, of the best known, of the agency which rated the most bonds in

[14] Hastings Lyon, *Investment* (Houghton Mifflin Co., Boston: 1926), p. 520.

the testing portfolio, or should some other basis be selected? On most of these bases the agency chosen would probably be either Moody or Standard. It is generally conceded, as Lincoln remarks, that "Probably Moody's ratings are the best known." [15] Nevertheless, any such decision would probably call forth the complaints of certain individuals having an interest in the rating business and, in addition, would be unsatisfactory to those investors who are guided by the ratings of another agency.

For these reasons it was decided to submit all four of the rating organizations to the tests hereinafter described. The specific rating assigned in 1929 by each agency to each bond was extracted from whichever manual happened to be the one in use by the investor on the dates specified, due attention having been given to changes in ratings. That is to say, if the rating manual had been issued on an annual basis in October and the ratings were being taken as of the middle of the following July, all supplements issued between October and July were examined for possible changes in the ratings.

In order to simplify these ratings for the reader, each agency's symbols were translated into the system of symbols recommended in Chapter 4 (except that the system recommended would not go below C–). Consequently, in this study the symbol A+ refers to AAA by Fitch, Aaa by Moody, A** by Poor, and A1+ by Standard. A– refers to the symbol A in any agency and so on for the remaining symbols. By this means simpler comparison is possible. It becomes easier to refer to a certain grade of bonds in any agency. Instead of referring to the class as the AAA group (Fitch), Aaa group (Moody), A** group (Poor), A1+ group (Standard), reference may be made simply to A+ bonds.

Tabulation of the issues included gave the distribution of issues by ratings shown in Table 6.

It is of interest to compare our selection with a list of bonds (which also exclude government and municipal issues) supposed to have been held by a more or less typical "country"

[15] Edmund E. Lincoln, *Testing before Investing* (McGraw-Hill Book Co., Inc., New York: 1926), p. 95.

TABLE 6. DISTRIBUTION OF ISSUES BY RATINGS, JULY 15, 1929

Rating	Fitch	Moody	Poor	Standard
A+	147	97	68	78
A	64	63	89	93
A—	80	99	110	104
B+	40	59	61	40
B	17	25	22	26
B—	4	2	7	16
C+	3	–	–	4
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	1
Unrated	8	18	6	1
Total	363	363	363	363

bank.[16] Since the portfolio in the latter case is given in terms of what appear to be Fitch ratings, this comparison is made on that basis. The portfolio involves bonds totalling $583,500.00 in face value and $515,382.75 in market value. Although stated in dollar figures, the data are given in Table 7 in terms of percentages, adapted from the published figures.

TABLE 7. PERCENTAGE DISTRIBUTION OF BONDS OF TWO PORTFOLIOS BY RATINGS

Rating	This Study	Blank National Bank
A+	40.5	10.3
A	17.6	10.3
A—	22.1	23.7
B+	11.0	24.8
B	4.7	19.6
B—	1.1	5.2
C+	.8	4.1
C	–	–
C—	–	1.0
D+	–	1.0
Unrated	2.2	–
Total	100.0	100.0

[16] "Complete List of Securities Held by Blank National Bank, Not Including Municipal or Governments," in the *Rand McNally Bankers Monthly*, Vol. 52, No. 3 (March, 1935), p. 149.

It is interesting also to compare these groupings with the distribution of bonds in 196 trusts, as shown by Riddle, although it should be borne in mind that his distribution includes federal, state, and municipal issues. According to Riddle's findings, by Fitch ratings, 35.8% of the trusts' bond holdings were in (A+) obligations, 21.8% in (A), 19.0% in (A–), 13.5% in (B+), 3.0% in (B–), 1.7% in issues rated lower than (B–), and 5.2% were unrated.[17] It is evident that even with the inclusion of federal, state, and municipal, Riddle's list, although of far better average investment quality than the Blank National Bank's rail-utility-industrial holdings, is of lower average standing than the testing portfolio of the present study.

From this comparison it is made clear that, in addition to the preponderance of railroad and public utility issues in the portfolio of the present study (a factor very favorable to the rating agencies, since such issues are more easily analyzed than those of most industrial corporations, as remarked above), another factor favoring the rating agency is present. This is the fact that there exists at the outset of these tests a testing portfolio rich in high-rating issues. It is noted, for example, that four out of ten issues of this study were in the highest classification, the group in which only one in ten of the Blank National Bank's issues could qualify. Further, the median issue in this study's testing portfolio fell in the A group, whereas the median issue in the Blank National's portfolio is found in the B+ group, two ratings lower. Likewise, it is noted that the modal group in this study's testing portfolio is in the A+ class, whereas the modal rating in the Bank's portfolio is the B+ quality, three ratings lower.

Two factors, however, qualify these comparisons. One is the fact that only Fitch groupings are used in the comparison. This agency's ratings are accepted in this connection, however, since they are the basis of comparison offered by the publishers of the Blank National's list. The other point is the element of time. This study's testing portfolio is represented as of

[17] N. Gilbert Riddle, *The Investment Policy of Trust Institutions* (Business Publications, Inc., Chicago: 1934), p. 196.

July, 1929; the Blank National's portfolio is as of May, 1935. It is impossible, however, to effect a proper time comparison, for May, 1935 was the earliest publication date of this portfolio. Since, however, no final conclusions are drawn from the comparison, these objections do not appear to be serious barriers to the interest which lies in their exhibition.

These observations are made in the hope that they might afford some clue as to the success or failure of the rating system. They are made to indicate what has been done statistically and how. The computations made from these basic data are described in following chapters.

CHAPTER 7

RATINGS AND MARKET ACTION

Basis of Tests.—One of the tests of the effectiveness of the ratings as investment guides is the market record of rated bonds. That is, of course, not the only measure. Yields, defaults, and rating changes must be considered; and these will be dealt with in succeeding chapters.

Some of the rating men claim that market action is no proper test of their system. Whether these individuals really believe this or not, it is clear to the impartial observer that market value is, for many bondholders, the chief means of the reacquirement of principal. Further, it is the principal current measure of economic conditions. It affects the borrowing power of millions of persons and organizations, the solvency of bankers, the points of view of business men. Market action, therefore, is a most important consideration. Opposition to the market action test, however, is by no means typical of all rating executives. Some of the more liberal ones admit the validity of market value tests and confess their inability to reason around them.

In order to study the relationship between ratings and market action, the market price of each of the 363 bonds at each of the testing dates was converted into a relative of the 1929 base price.[1] Thus Adams Express 4s–1948 (the first issue alphabetically), which actually sold for 86, 88, 86¼, 48½,

[1] Although this method involves the use of averages of relatives and thus reduces the importance of the larger items, it makes possible an easy comparison of relative change in individual bonds as well as of their aggregates, a desideratum which would not be practical using actual market prices and their averages. Arithmetic means of the relatives were used instead of geometric means because (1) they are better understood by most investors, and (2) they are more conservative in that they diminish the effect of the very low prices of some of the bonds in a falling market and to some extent in a rising market over a longer period, the latter in view of what might be called the "natural" rate of mortality in the bond market. It should be borne in mind, therefore, that the averages so obtained are conservative in the sense that they are higher than they would be if geometric means of the relatives had been used. This is a factor favorable to the record of the rating agencies. For a discussion of this subject, see, for example, Frederick C. Mills, *Statistical Methods* (Henry Holt & Co., Inc., New York: 1924), pp. 187-203.

72¼, 80 and 96½ at the respective testing dates had a corresponding relative market price record of 100.0, 102.3, 100.2, 56.4, 84.0, 93.0, and 112.2. It was then possible to average these relatives (simple arithmetic means) so as conveniently to ascertain whether A+ bonds fared better in the market than A bonds over a specific period. In this way it was possible to study the market action of the bonds both *en masse* and individually.

At the End of One Year.—From July 15, 1929 to July 14, 1930, the 363 bonds advanced, on the average, from a market base price of 100.0 to 102.0. Our chief interest, however, is how bonds of specific ratings fared during this time in comparison with bonds of other ratings. The most concise way of portraying these relationships is in the form of a table.

TABLE 8. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 14, 1930
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	104.0	104.3	104.8	104.1
A	103.5	103.4	103.4	102.5
A−	102.7	102.6	102.5	103.7
B+	99.9	100.3	99.8	98.6
B	92.3	94.7	96.2	98.6
B−	89.1	91.8	93.5	96.4
C+	85.0	–	–	94.3
C	–	–	–	–
C−	–	–	–	–
D+	–	–	–	94.1
Unrated	97.7	98.9	96.6	85.9
All	102.0	102.0	102.0	102.0

It will be seen in Table 8 that, on the average, bonds of specific ratings lived a market life almost exactly in accordance with the relative rank of assigned ratings; that is to say, A+ bonds did better than A bonds, A bonds did better than A− bonds, A− bonds did better than B+ bonds, etc. With one exception, this was true for all the ratings and for all the

rating agencies, the exception having been in the A rating of Standard's. In the latter case, A bonds did not do so well as A– bonds.

So far as average performance is concerned, this is a confirmation of the efficacy of the ratings from the point of view of market action over a one-year period. It does not, however, tell the whole story.

The averages tabulated above give no indication of how wide a dispersion existed within the means. Mathematically, the most desirable measure of dispersion is the standard deviation. Computation of such mathematically precise measures of variation is a more intricate and laborious task than is necessary or desirable for these data. For all practical purposes of this study, a sufficiently accurate picture of dispersion is obtained by tabulating the ranges, a statistical device which indicates the upper and lower limits of the figures in question. These ranges are shown in Table 9.

TABLE 9. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 14, 1930
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	108.0–98.4	108.1–99.5	108.0–99.5	108.1–98.0
A	112.5–97.0	106.9–96.4	107.2–95.8	110.7–98.4
A–	110.7–91.1	112.5–80.2	112.5–80.2	112.5–91.1
B+	111.7–75.3	110.7–68.9	120.6–59.6	110.1–68.9
B	120.6–67.9	120.6–59.6	111.7–67.9	111.7–59.6
B–	107.4–68.9	101.4–82.1	101.4–83.3	120.6–67.9
C+	101.4–59.6	–	–	101.4–82.1
C	–	–	–	–
C–	–	–	–	–
D+	–	–	–	94.1–94.1
Unrated	105.7–85.9	106.3–85.9	105.9–85.9	85.9–85.9
All	120.6–59.6	120.6–59.6	120.6–59.6	120.6–59.6

A few examples from these ranges will help to focus attention upon the significance of these data. Table 8 shows that the mean relative price of Fitch's A+ bonds in 1930 was 104.0. Table 9, however, indicates that one may find specific

bonds of any rating down through B– that did better market-wise than the average of A– bonds. The same is true for Moody through B, for Poor through B, and for Standard through B–.

Looking at the data from another angle, the lower side, and again taking Fitch's A– bonds with an average relative price of 104.0, one finds that there were A– bonds that did no better than the average of B– bonds, and the same is true for Moody, Poor, and Standard.

Taking a bird's-eye view of these figures, one may find many incongruities. Some A+ bonds, for example, did worse than some bonds of *any* rating, and this held true for any agency (Standard's single D+ issue excepted). In Fitch, for example, Firestone Cotton Mills 5s–1948, rated A+, fared worse, even over this one-year period, than certain other bonds of lower ratings, and of any rating. Likewise, in Moody, American Radiator 4½s–1947, rated A+, fared less well than some bonds of any rating. The same was true for the same issue for Poor. In Standard, the New Orleans, Texas & Mexico 5s–1954, rated A+, did worse than some bonds of any rating (Standard's single D+ issue excepted). The same breadth of dispersion is found throughout all the ratings and for all the agencies.

At the End of Two Years.—Within another year substantial changes had occurred. The general trend of the bond market had been downward, as shown by the fact that the average relative price of all the 363 bonds was 97.6 in 1931. The averages by ratings for this year are presented in Table 10.

Examination of Table 10 reveals the same sort of step-by-step progression of advance or decline as was found in 1930. That is to say that, on the average, bonds of specific ratings had had a market action consistent with the relative position of the bonds according to the ratings. As in 1930, there was one exception to this uniformity, and the exception appeared again in Standard, the latter's A– bonds having fared better than its A bonds. On the whole, however, the uniformity of market action by ratings may be considered noteworthy. It

TABLE 10. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 20, 1931
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	105.2	106.4	106.2	105.3
A	98.7	101.7	101.5	96.7
A—	96.8	97.5	98.9	101.8
B+	87.7	89.7	89.8	90.5
B	76.7	80.2	80.3	90.0
B—	70.2	56.6	78.9	85.5
C+	66.5	–	–	63.6
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	57.6
Unrated	90.9	91.5	86.3	55.5
All	97.6	97.6	97.6	97.6

TABLE 11. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 20, 1931
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	112.0–77.4	112.1–90.7	112.1–90.7	112.1–73.3
A	112.2–63.6	111.4–70.0	111.2–77.4	116.1–79.6
A—	116.1–55.7	112.2–71.2	116.1–55.7	117.6–55.7
B+	110.4–32.1	117.6–30.3	110.7–30.3	110.7–30.3
B	117.6–20.2	108.9–20.2	117.6–20.2	108.9–53.0
B—	108.9–30.3	73.9–39.3	107.7–57.6	108.2–20.2
C+	68.0–57.6	–	–	79.7–39.3
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	57.6–57.6
Unrated	108.2–55.5	108.7–55.5	108.2–55.5	55.5–55.5
All	117.6–20.2	117.6–20.2	117.6–20.2	117.6–20.2

serves again as a confirmation of the efficacy of the ratings under the circumstances described.

As in the preceding instance, however, consideration of the range of price relatives for 1931 tempers the findings. Here again there were enormous overlappings, wider in fact in 1931 than in 1930. A+ bonds spread themselves in price action all the way from 112.1 to 73.3 (Standard's record) and B+ bonds all the way from 110.7 to 30.3 (again Standard). Within the range of 117.6 to 20.2 for the 363 bonds one may readily find bonds of any rating that experienced a market record quite different from that of the average of its class, being either better or worse than some of those rated above them or below them respectively. It would be a simple matter to recite examples, but they would not alter conclusions.

At the End of Three Years.—By the middle of July, 1932, the bond market had sunk to depths never before sounded. The average relative price of the 363 bonds used in this study was 63.2. The average record of the 363 bonds by ratings is shown in Table 12.

In Table 12 we find the same sort of uniformity of market action as was evident in Tables 8 and 10. Bonds of any rating did a little better, on the average, than bonds of the next lower rating and a little worse than those of the next higher rating. The striking exception was the behavior of Standard's A– bonds which turned out somewhat better than Standard's A bonds. On the whole, however, considering the average, such a high degree of uniformity over a three-year period and in the worst year of the bond market is a matter to be reckoned with in any attempt to criticize ratings. Indeed one might contend, with some basis in fact, that bond ratings are in general pretty fair prognosticators of relative market values.

Before arriving at such a conclusion, however, it would be necessary to examine the range of the price relatives from which the means were drawn. It is obvious that there could have been very extensive overlappings in 363 bonds whose market price relatives ranged from 113.6 to 3.2. The ranges are given in Table 13.

TABLE 12. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 18, 1932
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	75.7	82.9	77.7	81.7
A	62.5	64.8	69.4	58.7
A—	58.1	58.3	64.4	67.2
B+	45.6	47.7	45.9	51.7
B	37.1	42.4	44.9	47.0
B—	32.0	16.4	37.5	50.1
C+	22.8	–	–	21.4
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	12.9
Unrated	63.6	51.2	55.2	12.6
All	63.2	63.2	63.2	63.2

TABLE 13. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 18, 1932
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	104.0–11.3	104.0–31.8	104.0–22.2	104.0–22.2
A	100.9–11.2	102.0–18.2	103.5–11.3	113.6–18.2
A—	113.6– 5.2	98.0– 5.2	113.6–11.2	100.7– 5.2
B+	87.4– 6.8	113.6– 6.8	89.8– 5.2	89.8– 5.1
B	82.7– 3.2	82.7– 3.2	82.8– 3.2	82.8– 9.1
B—	75.5– 7.3	23.2– 9.5	82.7– 7.3	83.8– 3.2
C+	32.4–12.9	–	–	45.7– 7.3
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	12.9–12.9
Unrated	83.8–12.6	83.8–12.6	83.8–12.6	12.6–12.6
All	113.6– 3.2	113.6– 3.2	113.6– 3.2	113.6– 3.2

Inspection of these data discloses that in a Fitch A+ bond purchased in 1929 one might have received in 1932 a relative market price of 104.0 or one of 11.3, that had one purchased in 1929 a Fitch A– bond one might have received in 1932 a relative market price of 113.6 or one of 5.2. Such dispersions were more or less characteristic of all the average price relatives for all the rating agencies, and they serve to throw many shadows into the spotlight of averages. It is the language of averages that the rating agencies always speak. In 1934, when there was some talk in bond circles as to whether bond price action and ratings had maintained their customary relationships, Moody published a chart of the average market action of bonds of different ratings, using a constant set of bonds for the purpose.[2] This chart shows the same general uniformity of relationship as is found in Tables 8, 10, and 12 above, though the averages in Moody's chart are not so wide in their swings. The purpose of the chart obviously was to answer the question which was being raised among bond buyers: How well did the ratings serve to protect the investor during this unprecedented decline? The answer according to the averages is, of course, most favorable, for, as both Moody's chart and the tables of this study show, bonds of specific ratings did decline more, on the average, as the ratings proceeded step by step lower. On the basis of this showing, most bondholders would probably be satisfied. But, the chart does not show that the averages, though they are probably true averages, are not especially representative of the fluctuations within the rating groups.[3]

At the End of Four Years.—By 1933 the average price relative for the 363 bonds had moved up to 83.4 along with the general rise in the bond market. The average price relatives by ratings are shown in Table 14.

It would not be unreasonable to expect that as time goes on, the general uniformity of relationship in the average price relatives by ratings would become less and less. At the end of four years, the uniformity was still characteristic, but not so

[2] *Moody's Investment Survey*, Vol. 26, No. 11 (February 5, 1934), p. 1466.
[3] For a discussion of the latter statement, see Chapter 8.

TABLE 14. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 17, 1933
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	94.2	99.0	96.4	96.9
A	79.5	87.3	89.2	79.1
A—	80.0	77.2	82.0	88.1
B+	69.4	74.1	70.0	74.4
B	65.7	69.8	69.7	71.2
B—	61.0	41.7	69.9	75.6
C+	52.3	–	–	51.5
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	15.3
Unrated	78.5	72.6	75.8	27.1
All	83.4	83.4	83.4	83.4

TABLE 15. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 17, 1933
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	112.2–31.2	112.2–65.1	112.2–39.4	112.2–35.5
A	105.4–23.9	108.9–33.7	111.5–31.2	130.4–31.2
A—	130.4–25.3	105.2–23.9	130.4–23.9	113.9–23.9
B+	102.2–21.6	130.4–21.6	104.3–22.3	104.3–21.6
B	113.9–13.7	110.6–22.0	113.9–13.7	93.8–42.6
B—	83.5–27.3	69.7–13.7	110.6–15.3	110.6–22.0
C+	71.8–15.3	–	–	70.5–13.7
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	15.3–15.3
Unrated	101.5–27.1	101.5–15.3	101.5–27.1	27.1–27.1
All	130.4–13.7	130.4–13.7	130.4–13.7	130.4–13.7

highly so as in previous years. In fact, the only agency in which complete uniformity was maintained was Moody. On the whole, however, there was approximate uniformity in the averages, and this again trumpets the success, on the average, of the ratings as indicators of market values.

Based upon earlier findings, it would likewise not be unreasonable to expect that along with decreasing uniformity in average price relatives as time goes on, there might be a tendency toward wider ranges in market action of the bonds concerned. This supposition is applicable to 1933, for the range for the 363 bonds at that testing date was from 130.4 to 13.7, a greater range than in any preceding year. The ranges by ratings are given in Table 15.

It requires only a casual inspection of the ranges to arrive at the same conclusions as were drawn for the earlier years: that the abnormalities are both striking and important, that a bond chosen in 1929 because it was an A– bond was supposed, if the claims of the rating agencies and the suppositions of the public were correct or even nearly so, to have a market action similar to other A– bonds and certainly not one which is worse than the average action of any bond of any rating in any agency. It is found, for example, that while Liggett & Myers Tobacco 5s–1951 advanced to a relative price of 112.2, St. Louis-San Francisco 5s–1950 declined to a relative price of 31.2—a spread of 81 points. Yet both were rated by Fitch as A+ bonds, the highest classification in "bonddom." And the relative price for the latter of these A+ bonds in 1933 was far lower than the average relative price for the bonds of any rating in any agency. Performances such as these are not exceptional; the tables are filled with them.

At the End of Five Years.—Another advance in the bond market was scored by the middle of July, 1934. At this time the average price relative for all our 363 bonds registered 87.6. In terms of averages by ratings the data are to be found in Table 16.

Again, in Table 16, we find the tendency of the averages to maintain a lesser uniformity with the passage of time.

TABLE 16. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 16, 1934
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	101.0	106.7	104.1	104.0
A	81.4	92.2	95.3	82.7
A—	85.4	79.1	84.3	94.1
B+	69.3	76.3	73.0	75.1
B	62.9	69.9	70.3	70.8
B—	55.6	40.5	67.8	79.7
C+	59.0	–	–	44.3
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	20.7
Unrated	86.8	82.8	83.2	23.0
All	87.6	87.6	87.6	87.6

TABLE 17. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 16, 1934
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	123.6–20.2	123.6–71.2	123.6–27.8	123.6–21.6
A	112.3–19.2	117.7–18.0	121.5–20.2	135.4–27.2
A—	135.4–20.7	117.7–19.2	135.4–18.0	120.5–18.0
B+	118.5–16.1	135.4–14.0	110.6–11.2	113.3–14.0
B	120.5– 7.4	114.2–11.2	120.5– 7.4	101.9–38.0
B—	94.9–14.0	73.6– 7.4	118.5–20.3	119.7–11.2
C+	82.7–20.7	–	–	75.7– 7.4
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	20.7–20.7
Unrated	119.7–27.1	119.7–20.7	119.7–20.7	23.0–23.0
All	135.4– 7.4	135.4– 7.4	135.4– 7.4	135.4– 7.4

Though this was not the case for either Moody or Poor, the dislocations in Fitch and Standard were greater than in earlier years.

It is in the range of price relatives, however, that the increasing dispersion and dislocation are most to be found. Ranging from price relatives of 135.4 to 7.4, the data by ratings are given in Table 17.

Examination of these data indicates clearly this tendency toward dispersion. In Fitch's A+ group, for example, are found price relatives ranging from 123.6 (Michigan Central 3½s–1952) to 20.2 (St. Louis-San Francisco 5s–1950), a spread of 103.4 points and certainly a most disconcerting experience for the individual who purchased A+ bonds which later ran into the lower end of these brackets. And in Standard's A bonds, to take another example, one finds a price relative of 135.4 for P. Lorillard 5s–1951 along with one of 27.2 for Chicago, Rock Island & Pacific 4½s–1952, a spread of 108.2 points. On the theory that bonds of lower ratings, being allegedly less stable, are more subject to fluctuation, one might reasonably expect to find such extreme dispersions, if they existed at all, to be confined to bonds of lower ratings. Issues of the "business man's investment" type (B+), to be very liberal, might be in this class, as indeed, they were (Fitch range: 118.5 to 16.1), but such extremely wide variations approximating 100 points were not at all confined to the lower-rated issues. Dispersions on this scale were quite typical of the entire list. Indeed, as examination of the range data shows, there were narrower spreads in the bonds of lower ratings.

At the End of Six Years.—By 1935, the continued rise in prices brought the average for the entire list to 91.1. This compares with the low of 63.2 in 1932 and with 83.4 and 87.6 respectively in 1933 and 1934. The level was still lower than it was in 1930 and 1931, but it was improving. The average price relatives by ratings are shown in Table 18.

There were discrepancies among all the agencies in this year in the general uniformity of relationship respecting price rel-

TABLE 18. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 15, 1935
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	100.7*	107.0*	104.2*	105.3*
A	87.1	92.5	95.7	94.2
A—	91.5	82.6	90.6	88.5
B+	75.6	87.3	80.1	80.1
B	65.3	70.9	69.6	79.8
B—	61.3	41.3	74.4	85.7
C+	68.0	–	–	49.2
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	36.5
Unrated	99.2	93.6	95.6	21.4
All	91.1**	91.1**	91.1**	91.1**

* Including General Petroleum 5s-1940 called February 25, 1935. Excluding this bond from the average affects only the Standard average, making it 105.4 instead of 105.3.

** Including General Petroleum, the average is 91.13; without it, the average is 91.10.

TABLE 19. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 RATINGS, JULY 15, 1935
(July 15, 1929 = 100.0)

1929 Rating	Fitch	Moody	Poor	Standard
A+	132.5–13.1	132.5–41.5	132.5–41.5	132.5–28.4
A	124.4–11.6	126.7–11.5	124.4–13.1	146.3–13.1
A—	146.3–17.7	127.5–11.6	146.3–11.5	144.7–11.5
B+	140.5–11.3	146.3–11.3	131.3–11.3	121.8–11.3
B	131.3– 8.1	121.8– 8.1	144.7– 8.1	120.0–13.9
B—	120.0– 9.1	66.2–16.4	140.5– 9.1	140.5– 8.1
C+	101.3–36.5	–	–	105.0– 9.1
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	36.5–36.5
Unrated	128.5–21.4	140.5–21.4	128.5–21.4	21.4–21.4
All	146.3– 8.1	146.3– 8.1	146.3– 8.1	146.3– 8.1

atives and ratings. Moody again, as in 1932, failed to attain complete uniformity, the Moody B+ group performing noticeably better than the A– group. Standard's uniformity improved in the investment brackets, but the performance of the B– group topped that of the B group. Fitch's A– group averaged appreciably higher than the A group; and Fitch's C+ group performed better than either the B– or the B groups.

In the average price relatives of A+ bonds, three of the agencies in 1935 were somewhat below the 1930 levels. Moody's group, however, passed its 1930 average by 2.7 points, and even topped its 1931 level, when the A+ bonds of all other agencies averaged the highest for the period of this study.

On the other hand, the ranges within the rating groups were extraordinary, as shown in Table 19.

With three exceptions (Moody's and Poor's A+ groups, each with a range of 91 points, and Moody's B– group with a range of only 49.8 points) all the groups of each agency through B– recorded spreads well over 100 points. Such dispersions might be expected in the B and C groups, but not in the investment ranks where, as a matter of fact, the spreads were on the whole the widest. Moody's B+ group ranged 135 points between P. Lorillard 5s–1951 at 146.3 and Missouri Pacific 4s–1975 at 11.3. Poor's A– group had a range of 134.8 points between P. Lorillard 5s–1951 at 146.3 and Wisconsin Central 4s–1949 at 11.5. Standard's A and A– groups each had a range of 133.2 points. Stated in another way, there were bonds in each of Fitch's investment classes (A+ through B+), whose price relatives were far lower than the lowest in the speculative C+ rating group. Moody's A and A– groups, as well as the B+ group, included bonds with price relatives lower than the lowest in the B– or speculative group.

Recapitulation.—No statistical demonstration can escape the fact that the years 1929-1935 were unprecedented years in the bond market, as they were in nearly all fields. With

that in mind many individuals favorably inclined toward the system of rating would be inclined to judge the record of the agencies liberally and perhaps to find excuses for their failure to protect the investor. Such inclination to disregard the recent record, however, does not take account of the fact that many investors use the ratings for protection against exactly such calamities. Indeed it is, again to borrow an expression from Graham and Dodd, "from the viewpoint of calamity," [4] that ratings are used in many cases. Even the rating executives themselves admit the validity of the contention that it is in the unusual years that the protection of the ratings is most needed.

Stated as a principle, the expectation of both the rating agencies and their clients is that bonds of given ratings should perform marketwise approximately in relation to bonds of other ratings as the respective ratings stand with reference to each other. Thus A+ bonds should have a market record better than those of any other rating. And, indeed, the validity of this principle is borne out in the averages as shown in Chart 1. Obviously, the record is not perfect; the averages did not maintain their positions in exact accordance with this principle, but with the exception of the strayings of the C+ group and the eventual supremacy of the A– over the A group, the averages did give substantial support to the rating theory.

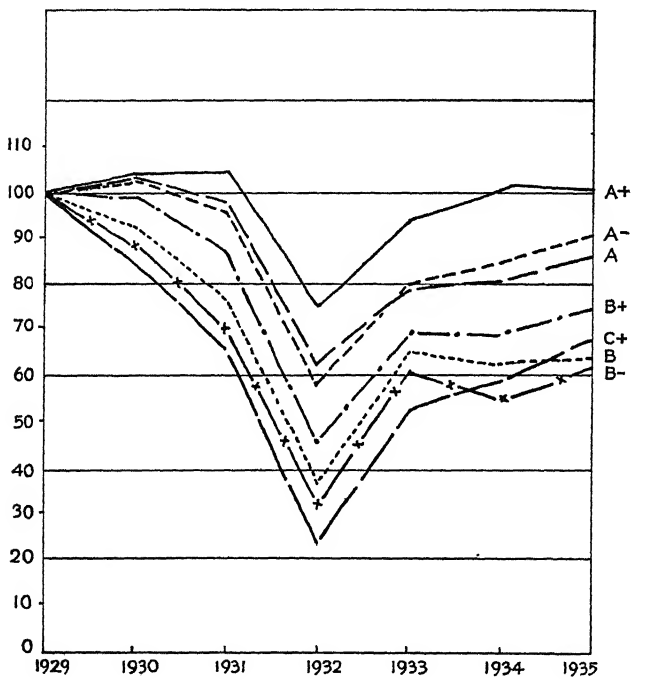
In view of this conditional affirmation of the rating theory and the above-discussed findings as to ranges, the possibility of a bond of a specific rating acting marketwise in an unbecoming manner should, however, be considered. Thus, it would not be surprising if some A+ bonds were to invade the market performance territory of A bonds, and a liberally minded person would admit some A+ bonds at times to the grounds of A– bonds, but for A+ bonds to run through the entire gamut of rating classes is clearly beyond the expectation of anyone other than the person who has given no credence at all to ratings. The more typical belief is that bonds

[4] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. viii.

rated A– or higher are pretty well immune from fluctuations parallelling those of C+ bonds under *any* conditions. This attitude is exemplified by the remarks of one banker when he writes that

If the bankers of this country had invested their bond money in the AAA, AA, and A bonds, the losses from liquidation would have

CHART 1. AVERAGE OF MARKET PRICE RELATIVES OF 363 BONDS BY FITCH 1929 RATINGS
(July 15, 1929 = 100.0)



been held at an extremely low figure, probably quite comparable to the losses sustained in the average note case during the same period.[5]

In view of the evidence presented above, and without any knowledge of exactly what the "losses sustained in the average note case during the same period" were, it is extremely

[5] William Edward Johnson, "What a Bank Director Should Know about the Bond Portfolio," in *The Mid-Western Banker*, Vol. 27, No. 12 (December, 1933), p. 23.

doubtful that this banker's respect for the ratings is entirely justified.[6] Even with A+ bonds the loss from 1929 to 1932 (and many investors, including bankers, were forced to reacquire their principal at that time) was about 25% (Fitch). With A bonds (Fitch AA), the loss was about 37%. With A– bonds (Fitch A), the loss was about 42%. It is difficult to believe that the "losses sustained in the average note case during the same period" even approached these figures. Some reason for the above-mentioned banker's willingness to believe that the losses on bonds rated A— and higher were no more than those on the average note case may be found in some of the rating agencies' published material on the subject (Poor excepted). This matter will be treated in the next following chapters.

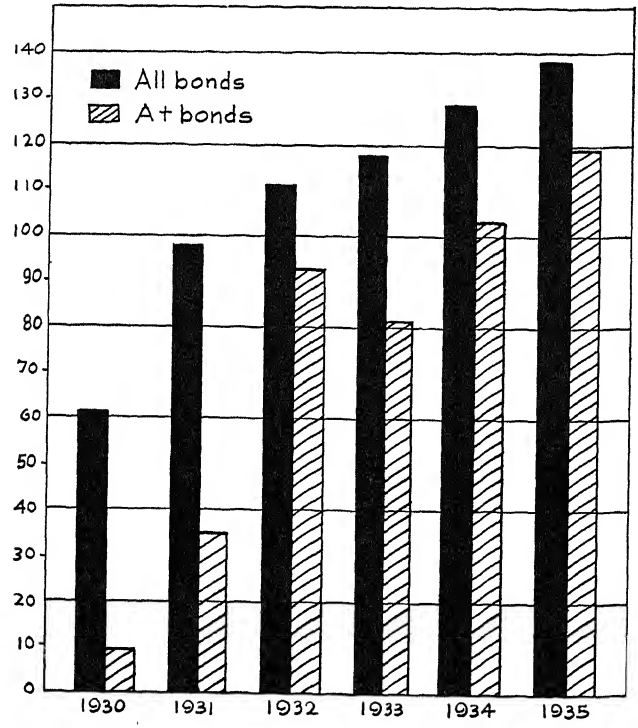
It is because the rating agencies (Poor excepted) publish their market record data only in the form of averages that general opinion among investors holds a much more favorable view of the ratings than is justified by the findings of this study. If the market record were published by the rating agencies in such a way as to give information similar to that contained in Chart 2, undoubtedly a different view would obtain.

It is worthy of note also that, although no attempt has been made to indicate statistically the differences in the market record of equally-rated bonds of different industries, even a casual inspection of the record reveals that the railroads failed to justify the preference accorded them as a group. It is generally recognized that the railroads were overrated by investors, and it is equally apparent that the industry was overrated by the rating agencies themselves. Indeed, it may be that in part the error of investors was due to the failure of the rating bureaus to foresee (or at least to warn investors

[6] Some index of the amount of losses on loans made by bankers during the same period may be had from the report of the Comptroller of the Currency, who shows that for national banks the amounts of loans actually charged off for 1930, 1931, and 1932 were, as percentage of total loans and discounts, 0.70%, 1.42%, and 2.52% respectively. *Seventy-third Annual Report of the Comptroller of Currency*, (United States Government Printing Office, Washington: 1936), p. 95. For Federal Reserve member banks the "losses and depreciation" on loans for 1930, 1931 and 1932 were 0.55%, 0.88%, and 1.41% respectively. *Twenty-second Annual Report of the Board of Governors of the Federal Reserve System* (United States Government Printing Office, Washington: 1936), p. 159.

of) the imminent dangers of commitments in the railroad field. If the rating agencies did not foresee such casualties, then it must be admitted that they did little, if any, better than the general public in estimating the relative stability of the transportation industry.

CHART 2. RANGE OF MARKET PRICE RELATIVES OF 363 BONDS BY FITCH 1929 RATINGS
(July 15, 1929 = 100.0)



One criticism which might be leveled against the findings of this market performance study is that many of the bonds included did not retain the same rating during the entire period; that is, that in many cases the rating agency changed the rating, thereby warning the investor and thereby making invalid any conclusions based upon a fixed portfolio by base-year ratings. There is indeed some point in this assertion,

and the matter of rating changes will be discussed at a later time. In the meantime it may be pointed out that most rating users rightly or wrongly regard the ratings as long-term guides of investment policy, as indeed they purport to be even though the publication of changes amounts to a confession of the lack of long-term applicability. It is understood, of course, that a "long term" does not mean forever, but surely the rating agencies' claim that they take into consideration the long-term outlook for the industry, the position of the enterprise within the industry, the probable effects of legislative treatment or regulation, of "shifting population movements, or industrial changes in the territory served," justifies the rating user in assuming that such a far-reaching covenant is not contracted with a view to a short term of several years. The matter of rating changes, however, is not to be overlooked. Indeed, it is an important part of the rating inquiry.

CHAPTER 8

RATINGS AND YIELDS

Importance of Yields.—The chief weakness of market price changes as a measure of bond market action is that price alone neglects certain essential features of such a security. A bond selling at 90 is not necessarily selling at a higher market price than a bond selling at 85, for the latter may carry a higher rate of interest or may mature sooner, or both. The measure which takes all three factors into consideration is yield, for yield is the quotient of price, rate of interest, and remaining life. It is furthermore the only single criterion by which the market's estimation of bond values may be made comparable. Consequently it is the most valuable measure of the standing of investment obligations. And it is the measure used by the rating agencies in computing and reporting market performance by ratings.

The investor who purchased an A bond in 1929 when it was selling on a yield basis of 5.68% and who found it quoted at an 11.02% yield some time later would not think it queer for someone to ask whether A bonds, issues which are safe "virtually beyond question," usually take such a course. In fact, he might become quite curious, to the point perhaps of inquiring whether his friend, who acquired only A+ bonds, did any better.

It is generally understood that yields increase as ratings decline; that is, the smallest yields are found in A+ bonds, the next smallest in A, and so on. If this principle were not a valid one as a general proposition it would upset all established theories of investment. But if the theory be accepted and if the ratings be recognized as proper indicators of investment quality, it necessarily follows that yields must increase as the ratings decline.

To extend this question further, the curious-minded investor might inquire whether such a relationship holds good over any length of time. Do A+ bonds still offer the lowest yields—after one, two, or three years following the date of rating?

In order to investigate the record of the ratings from this angle, therefore, computations were made of the average yields by ratings, such averages being the simple arithmetic means, the method used by the rating agencies (excepting Poor, which publishes no such data).

At the Outset.—According to Badger and Guthmann,[1] Dice,[2] Pynchon,[3] and others, yields on bonds increase very regularly as the ratings proceed step by step downward. This principle is demonstrated by the data of the present study, as shown in Table 20.

This generally accepted principle cannot be controverted. Yields do increase with interesting regularity as the ratings proceed step by step downward, but the qualification should be made that the ratings be taken as of the same time as the yields. Whether there is such agreement in a constant portfolio with base-year ratings has never been publicly shown. Much of this chapter will be concerned with that question.

It is of interest, however, while dealing with the 1929 yields, to observe the width of the ranges in the yields from which the averages in Table 20 were taken. For that purpose the ranges of yields are shown in Table 21.

It will be observed from this table that, just as average yields increase as the ratings proceed successively downward, the yield ranges tend to increase as the ratings fall in quality. This is another way of saying that the market and the rating agencies are more nearly in agreement as to a bond's value in the higher ratings than they are in the lower classes.

After One Year.—The average yield of all 363 bonds in 1929 was 5.50%. By the middle of July, 1930, the com-

[1] Ralph E. Badger and Harry G. Guthmann, *Investment Principles and Practices* (Prentice-Hall, Inc., New York: 1936), p. 66.
[2] Charles A. Dice, *The Stock Market* (McGraw-Hill Book Co., Inc., New York: 1929), p. 583.
[3] *Annual Quotation Booklet* (Pynchon & Co., New York).

TABLE 20. AVERAGE YIELDS OF 363 BONDS BY 1929 RATINGS, JULY 15, 1929

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.90	4.81	4.81	4.85
A	5.25	5.02	5.01	5.03
A—	5.64	5.44	5.45	5.48
B+	6.43	6.16	6.14	6.17
B	7.44	7.39	7.09	6.63
B—	7.54	8.53	7.90	7.26
C+	8.36	–	–	7.33
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	7.90
Unrated	6.22	5.91	6.20	6.45
All	5.50	5.50	5.50	5.50

TABLE 21. RANGE OF YIELDS OF 363 BONDS BY 1929 RATINGS, JULY 15, 1929

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.23–5.90	4.23–5.65	4.23–5.51	4.23–5.65
A	4.71–5.99	4.71–5.84	4.64–6.18	4.71–6.25
A—	4.84–6.90	4.84–6.99	4.75–6.92	4.71–8.48
B+	5.23–8.56	5.32–8.48	4.96–8.56	5.24–7.80
B	5.42–9.97	5.29–9.97	5.42–9.97	5.42–8.82
B—	5.29–8.82	7.65–9.41	5.29–9.41	5.66–9.97
C+	7.76–9.41	–	–	5.29–9.41
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	7.90–7.90
Unrated	5.19–7.15	4.67–7.90	5.20–7.15	6.45–6.45
All	4.23–9.97	4.23–9.97	4.23–9.97	4.23–9.97

parable figure was 5.40%, indicating a slight rise in the market. The average yields by ratings at this time are shown in Table 22.

Here again, as in 1929, there was a remarkable regularity in the progression of the yield averages. The only interruption of this regularity was the average yield of 8.56% in both B– and C+ bonds (Fitch), and this may be said to be an insignificant departure, due perhaps to the very small number of bonds rated by Fitch as C+. Taken as a whole, the regularity is remarkable.

If there were wide ranges in the yields by ratings in 1929, the dispersions were even wider in 1930. And it is in such variations from the average that much of the interest in bond yields lies. These dispersions are shown in Table 23.

In Fitch A+ bonds (1929), one may find yields in 1930, as shown in Table 23, as low as 3.48% (Baltimore & Ohio 4s–1948) or as high as 6.10% (Firestone Cotton Mills 5s–1948). In Fitch 1929 B+ issues ("business men's investments"), one may find yields in 1930 as low as 4.87% (New York, New Haven & Hartford 4½s–1967) or as high as 11.64% (Jacob Dold Packing 6s–1942). And the average yield of 5.40% for all issues was to be found within the range of all ratings from A+ through B+.

After Two Years.—Again no break in the regularity of inverse relationship between yields and ratings is found in the computations for 1931. The course of the bond market in general had been downward, as shown by the average yield of 5.95% for all 363 issues. The average yields by ratings are given in Table 24.

Although the conversion of yields between Standard's B+ and B issues constituted almost a break in the regularity of the averages, it failed to reach that point, and the relationship of the averages was preserved.[4]

[4] It should be recognized that in this table is included one average which fails to take account of a default which occurred in the list since the same approximate date of a year earlier. It is obvious that the yield on a defaulted bond is zero. Yet zero cannot be included in the computations of average yields, for such procedure would lower the average and thus reflect a higher market valuation, which is contrary to fact. Since there is no feasible method of taking account of this, defaulted issues have been omitted in computing the average yields and the ranges of yields of the present and all subsequent tables of yield averages and yield ranges.

TABLE 22. AVERAGE YIELDS OF 363 BONDS BY 1929 RATINGS, JULY 14, 1930

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.62	4.52	4.49	4.56
A	5.06	4.81	4.78	4.81
A—	5.44	5.29	5.29	5.31
B+	6.66	6.18	6.19	6.40
B	8.36	7.94	7.62	6.70
B—	8.56	9.58	8.60	7.85
C+	8.56	–	–	8.06
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	8.49
Unrated	6.51	6.17	6.69	8.09
All	5.40	5.40	5.40	5.40

TABLE 23. RANGE OF YIELDS OF 363 BONDS BY 1929 RATINGS, JULY 14, 1930

1929 Rating	Fitch	Moody	Poor	Standard
A+	3.48– 6.10	3.48– 5.49	3.48– 5.49	3.48– 5.49
A	4.42– 6.36	4.39– 6.19	4.33– 5.80	4.40– 6.10
A—	4.61– 8.05	4.59– 8.57	4.61– 7.77	4.40– 8.28
B+	4.87–11.64	4.67–11.10	4.87–12.20	4.87–11.10
B	5.44–14.95	5.52–14.95	5.44–14.95	5.44–12.20
B—	5.52–11.10	9.38– 9.78	5.52– 9.73	5.65–14.95
C+	7.82– 9.38	–	–	5.52– 9.78
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	8.49– 8.49
Unrated	5.04– 8.09	4.42– 8.71	4.88– 8.09	8.09– 8.09
All	3.48–14.95	3.48–14.95	3.48–14.95	3.48–14.95

As was the case with market price relatives, the range of yields becomes wider as time passes. This is shown in Table 25 on the following page.

In these yield ranges one finds that Standard's 1929 A+ bonds yielded in 1931 from 3.85% (Union Pacific 4s–1947) to 7.86% (New Orleans, Texas & Mexico 5s–1954), a range of 4.01. In Standard's 1929 B+ issues, there were yields in 1931 from 4.76% (Appalachian Electric Power 5s–1956) to 25.00% (Florida East Coast 5s–1974), a range of 20.34.

After Three Years.—It was in 1932 that the bond market as a whole struck its lowest level. Of the bonds included in this study, the 355 not in default at this time gave an average yield, at the price of July 18, 1932, of 12.24%. The average yields by ratings are shown in Table 26.

As Table 26 shows, the general progression of yields in accordance with ratings is found again, and this time after a lapse of three years and in the most disrupted bond market in history. This progression was not perfect, but the departures were not striking. Interruptions in the normal relationship occurred only between Fitch's B– and C+ issues and between Standard's B, B–, and C+ bonds.

The story in terms of ranges is much the same as before. It is set forth in Table 27.

Fitch's 1929 A+ bonds yielded in 1932 from 4.45% (New York Gas, Electric Light, Heat & Power 4s–1949) to 44.70% (St. Louis-San Francisco 5s–1950), a range of 40.25. Yet all the issues of this group were rated A+ only three years earlier. All had allegedly the same investment worth, and the rating agency with its superior facilities and other advantages had pronounced these issues largely impervious to fluctuations other than those due to changes in the money market. Moody's 1929 B+ issues yielded in 1932 from 5.73% (P. Lorillard 5s–1951) to 100.00% (Norfolk Southern 5s–1961), a spread of 94.27. Such enormous yields as are found scattered throughout this range from 5.73% to 100.00% certainly cast considerable doubt upon Moody's claim that the ratings have been perfected.

TABLE 24. AVERAGE YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 20, 1931

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.62	4.41	4.44	4.53
A	5.43	4.91	4.93	4.94
A—	6.09	5.74	5.69	5.92
B+	8.27	7.81	7.54	7.75
B	9.90	9.25	9.51	7.84
B—	13.05	17.42	10.90	8.53
C+	14.37	–	–	13.62
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	14.09
Unrated	7.70	7.15	8.21	13.59
All	5.95	5.95	5.95	5.95

* Excluding defaulted issue.

TABLE 25. RANGE OF YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 20, 1931

1929 Rating	Fitch	Moody	Poor	Standard
A+	3.85– 7.07	3.85– 5.88	3.85– 5.88	3.85– 7.86
A	4.14– 9.15	4.14– 9.06	3.92– 7.81	4.14– 7.52
A—	4.55.13.68	4.35– 8.73	4.32–13.68	4.23–13.68
B+	4.90–21.20	4.98–25.00	4.90–25.00	4.76–25.00
B	6.65–20.15	6.38–15.60	5.00–21.20	5.40–15.60
B—	7.67–25.00	14.68–20.15	6.87–14.68	6.31–13.70
C+	12.17–14.68	–	–	9.30–20.15
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	14.09–14.09
Unrated	4.91–13.59	4.23–14.09	5.41–13.59	13.59–13.59
All	3.85–25.00	3.85–25.00	3.85–25.00	3.85–25.00

* Excluding defaulted bond.

TABLE 26. AVERAGE YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 18, 1932

1929 Rating	Fitch	Moody	Poor	Standard
A+	8.31	6.54	7.35	7.11
A	11.38	9.26	9.78	9.74
A—	12.56	12.33	11.51	12.96
B+	20.43	19.20	16.91	17.36
B	25.49	20.97	24.73	16.33
B—	35.30	58.20	30.82	18.71
C+	24.70	–	–	51.79
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	10.31	13.22	11.66	Default
All	12.24	12.24	12.24	12.24

* Excluding defaults.

TABLE 27. RANGE OF YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 18, 1932

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.45– 44.70	4.45– 16.50	4.70– 27.70	4.45– 27.70
A	4.87– 46.25	4.71– 27.70	4.45– 36.60	4.52– 36.60
A—	5.63– 45.20	5.24– 46.25	4.87– 46.25	4.67– 46.25
B+	7.58–100.00	5.73–100.00	6.84– 45.20	6.75–100.00
B	8.49– 75.00	8.00– 71.45	9.63–100.00	7.32– 38.90
B—	14.45– 71.45	41.40– 75.00	11.37– 71.45	8.18– 54.80
C+	8.00– 41.40	–	–	19.30– 75.00
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	8.00– 16.40	6.36– 27.00	8.18– 16.40	Default
All	4.45–100.00	4.45–100.00	4.45–100.00	4.45–100.00

* Excluding defaults.

As anyone might guess, the yield of 100.00% in Norfolk Southern reflected very drastic conditions in which default was imminent, but default had not occurred, and there was no *absolute* certainty that it would. From a statistical point of view such a yield could only be included as a yield, unless one were willing to inject into the computations a subjective element in the form of guesswork as to the probability of default or unless one were willing to use hindsight. Varying only in degree, such extreme ranges were common to all the ratings of all the agencies.

After Four Years.—Considerable recovery occurred in the bond market from 1932 to 1933. The average yield for the 363 bonds (exclusive of defaults) on July 17, 1933 was 7.03%. The average yields by ratings are shown in Table 28.

Such regularity of average yields by ratings after four years of a highly irregular bond market is indeed remarkable. In only two places in Table 28 are there departures from such regularity; between B+ and B bonds in Fitch and between B and B– in Standard.

It is not primarily in the averages, however, that the major interest lies. Individual cases, as always, present the most enlightening data. In the form of ranges, such data are presented concisely in Table. 29.

Ranges were not nearly so wide in 1933 as they were a year earlier. The range on Fitch's 1929 A+ bonds in 1933 was from 3.87% (New York Gas, Electric Light, Heat & Power 4s–1949) to 12.56% (St. Paul & Kansas City Short Line 4½s–1941), a spread of 8.69. In the A group (Fitch), the range was from 4.26% (Pacific Gas & Electric 5s–1942) to 17.25% (Chicago, Rock Island & Pacific 4½s–1952), a spread of 12.99, which can hardly be said to constitute confirmation of Fitch's claim that such issues were safe "virtually beyond question." [5] These spreads were, in most cases, large enough to include within their limits the average yield of any rating group.

[5] The *Fitch Bond Book*, 1931, second unnumbered page following Foreword.

TABLE 28. AVERAGE YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 17, 1933

1929 Rating	Fitch	Moody	Poor	Standard
A+	5.34	4.91	5.08	4.95
A	6.93	5.95	5.80	6.00
A—	7.47	7.42	7.27	7.46
B+	10.59	9.35	9.43	8.95
B	10.48	10.91	9.95	10.17
B—	11.30	17.95	11.59	9.75
C+	15.03	–	–	13.81
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	7.95	7.99	7.88	Default
All	7.03	7.03	7.03	7.03

* Excluding defaults.

TABLE 29. RANGE OF YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 17, 1933

1929 Rating	Fitch	Moody	Poor	Standard
A+	3.87–12.56	3.87– 8.38	3.89– 8.38	3.87– 7.53
A	4.26–17.25	4.26–10.88	3.87–10.12	4.25–17.25
A—	4.59–12.30	4.71–17.25	4.26–17.25	4.31–14.00
B+	5.92–19.20	4.59–19.50	5.68–19.20	5.68–19.50
B	6.11–19.50	6.09–17.25	6.49–19.50	6.41–19.20
B—	10.10–12.85	17.95–17.95	8.68–17.95	6.49–14.17
C+	12.10–17.95	–	–	10.94–17.95
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	6.53–10.75	4.80–13.95	6.53–10.75	Default
All	3.87–19.50	3.87–19.50	3.87–19.50	3.87–19.50

* Excluding defaults.

Of course, it may be said that the A rating in the Chicago, Rock Island & Pacific 4½s–1952, for example, was not assigned in 1929 for 1933, but certainly it may be considered as a matter of investment policy that a bond which yielded 5.25% in 1929 and declined to a yield of 17.00% in 1932 and to 17.25% in 1933 (and defaulted later in 1933) was hardly safe "virtually beyond question" even in 1929. This boils itself down to the question of how long a time an investment judgment properly takes into account, and that, of course, is necessarily a controversial point. Nevertheless, it does not appear unreasonable to adopt the point of view that just as the construction of a house is not guaranteed as to its perfection for more than a short period of several months or a year, it is not expected to crumble at the end of four years. Some repairs it might require, but not a completely new structure. So likewise, if in three or four years an A bond were to decline to the grade of A– or B+ obligations, the situation might be serious enough, but if rating on an expert basis is anything more than an extremely temporary affair, an A bond should not turn out in three or four years to carry a C+ designation or an equivalent market value.

After Five Years.—By July 16, 1934, the bond market in general had risen to the point where the average yield on the 363 bonds, exclusive of defaults, stood at 6.30%. The data by ratings are presented in Table 30.

Departures from regularity in 1934 were few in number. Such interruptions are to be found in Table 30 in Fitch's B– bonds, and in Standard's B– bonds. It should be noted, however,. that there were greater gaps in the average yields *between* ratings than there were in the earlier years of the testing period.

As before, the more important data are to be found in the tabulation of yield ranges, as shown in Table 31.

Here, in Table 31, the spreads were wider, on the whole, than those of earlier years, 1932 excepted. It should be borne in mind, however, that many of the issues which in 1932 showed enormous yields had been defaulted by 1934 and that

TABLE 30. AVERAGE YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 16, 1934

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.67	4.30	4.47	4.27
A	6.03	5.49	5.21	5.23
A—	7.01	6.54	6.37	6.54
B+	10.03	8.77	8.96	8.38
B	10.05	10.31	9.20	10.44
B—	9.81	18.50	10.88	8.76
C+	14.49	–	–	15.40
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	6.95	6.66	7.11	Default
All	6.30	6.30	6.30	6.30

* Exclusive of defaults.

TABLE 31. RANGE OF YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 16, 1934

1929 Rating	Fitch	Moody	Poor	Standard
A+	3.01–11.54	3.01– 6.69	3.18– 7.33	3.01– 7.33
A	3.91–11.02	3.11–11.54	3.01–11.02	3.59–11.54
A—	4.10–13.45	4.10–10.81	3.91–15.95	4.08–15.95
B+	5.18–19.70	4.28–15.95	4.67–21.20	4.98–18.10
B	5.70–21.20	5.48–21.20	5.70–18.10	6.00–21.20
B—	8.81–10.81	18.50–18.50	6.10–18.50	5.13–15.65
C+	10.47–18.50	–	–	12.30–18.50
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	5.13–10.54	4.23–11.11	5.13–10.54	Default
All	3.01–21.20	3.01–21.20	3.01–21.20	3.01–21.20

* Exclusive of defaults.

they were thereby eliminated in the computation of both averages and ranges.

The important feature of the range data is the demonstration of the tendency toward overlapping. The average yield on Fitch's 1929 B+ bonds, in 1934, was 10.03%. But the ranges of every Fitch rating from A+ through B– (every used rating except C+) included the 10.03 point. This was typical of the yield data for most of the ratings and for all the agencies.

After Six Years.—The results of this period are of particular interest partly because they are the most recent and partly because they pertain to an interval of strong recovery in the bond market. Average yield statistics are given in Table 32, opposite.

By 1935, the general improvement in the bond market brought the average yields for the list of 320 bonds not in default down to 6.09%. There were, however, in this year, 43 defaulted issues or 11.8% of the original list. There were also eight called bonds, besides a number on which a call was expected. Of these called bonds, five were retired prior to the July quotation date and three were to be retired so soon thereafter that no statistically comparable yields were afforded.[6] For the purposes of this chapter, the called bonds (all classed as investment issues) could hardly be grouped with defaults as "no yield" bonds. The return on these bonds was therefore included at the current yield, either as of the July quotation date, or, for those five retired prior to that date, at the current yield on date of call. In so doing, no great statistical error was involved, since the market price approaches the call price well in advance of the call date.

In 1934, the yields on these eight called bonds averaged 4.66% and ranged from 3.18% (Norfolk & Western 4s–1934, rated A+ by all the agencies) to 5.84% (Armour [Del.] 5½s–1943, rated A– by three agencies and B+ by the fourth). On the basis of current yields, the average yield for the eight bonds was 4.91%, ranging from 3.81% for Norfolk & West-

[6] *Supra*, Chapter 6.

TABLE 32. AVERAGE YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 16, 1935

1929 Rating	Fitch	Moody	Poor	Standard
A+	4.76	4.38	4.59	4.31
A	5.30	5.77	5.44	5.41
A—	6.97	6.48	5.58	5.78
B+	9.30	7.41	8.72	8.28
B	9.47	10.33	9.28	9.90
B—	7.60	23.62	11.15	8.70
C+	15.92	–	–	15.35
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	5.36	5.44	5.47	Default
All	6.09	6.09	6.09	6.09

* Excluding defaults.

TABLE 33. RANGE OF YIELDS* OF 363 BONDS BY 1929 RATINGS, JULY 15, 1935

1929 Rating	Fitch	Moody	Poor	Standard
A+	2.35–12.43	2.35–10.95	2.35–10.95	2.35–10.95
A	2.99–10.10	2.99–19.05	2.52–19.05	2.99–19.05
A—	4.11–27.30	3.09–25.00	2.99–12.58	3.90–12.43
B+	4.29–40.00	3.54–40.00	4.62–40.00	4.59–25.00
B	5.48–15.25	4.78–27.30	4.78–27.30	5.23–40.00
B—	6.78– 8.42	23.62–23.62	4.29–23.62	4.29–27.30
C+	8.22–23.62	–	–	7.08–23.62
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	Default
Unrated	4.36– 5.73	3.95– 8.85	4.83– 6.63	Default
All	2.35–40.00	2.35–40.00	2.35–40.00	2.35–40.00

* Excluding defaults.

ern 4s-1944, to 5.91% for Chicago Union Station 6½s-1963. Three of the called bonds were rated A+ by all the agencies. A fourth bond was rated A by Poor and A+ by the other three agencies. Two were rated A by Fitch and A– by the others. Two were rated A– by one agency and B+ by the other three; the yields in these last two, however, were close to the average for the group. The inclusion of these called issues at current yield lowered the average (established for 313 bonds neither defaulted nor called) only slightly.

As in the earlier years, it is in the range data that much of the interest lies. These ranges for 1935 are shown in Table 33.

Even disregarding defaulted issues, the range of yields among undefaulted bonds is very great. In Moody's B+ group, between the yield of 40.00% (Chicago, Milwaukee, St. Paul & Pacific 5s-1975) and 3.54% (P. Lorillard 5s-1951) is a range of 36.46 points. Almost as great dispersion occurred also in the Fitch and the Poor B+ groups, with spreads of 35.71 and 35.38 points respectively.

In the A+ groups, Fitch recorded the greatest spread, 10.08 points between the 12.43% yield of Missouri-Kansas-Texas Railroad 5s-1962 and the 2.35% yield of Louisville and Nashville 4s–1940. The A– groups of Fitch and of Moody, each recorded a spread of well over 20 points, while Poor's and Standard's A– groups had less than 10 points between their highest and lowest yields. And with four exceptions, each rating group of all agencies included the average yield in its range. The exceptions were the B– and C+ groups of Fitch, the B– group of Moody (which included only one issue), and the C+ group of Standard, where the lowest yields were substantially above the average yield for all undefaulted bonds.

Recapitulation.—Considering averages only, there can be little doubt that both the record of market action (discussed in Chapter 7) and the yield record of bonds by ratings indicate that the system of ratings is an effective guide to investment values. Although an average is an important summary meas-

ure of the performance or standing of any group of economic data, it may represent the movement of individual items comprising the average rather inadequately. It is small comfort to the investor who has been led to believe that any bond of a specific rating is even the *approximate* equivalent of any other bond of the same rating when averages are considered, if he happens to own a security the market behavior of which departs radically from the average. Taking account of such variations from averages, the findings of this chapter cast considerable doubt upon the validity of rating agencies' claims that the ratings have been "perfected," that they are "scientific," that they are "conservative," that they are "accurate," or that they "do not rest on opinion."

In general, the conclusions which one may reasonably draw from these data are that, in terms of averages, the rating agencies succeeded in protecting the investor against relative decline in the bond market; that, in particular, abysmal gaps are found in the market record of given ratings, and that if the investor happened to select his issues on the basis of ratings, there was always the possibility of obtaining an obligation that would turn in a record at great variance with the average of its class.

Several tenets of investment may be derived from these data. In the first place, it is clear that although the inverse relationship between ratings and yield is confirmed in terms of averages, the tendency is for more and more, and wider and wider, digressions from the principle to appear as time goes on: as the base-year ratings become older.

Secondly, as time proceeds further from the base year, there are wider gaps in the average yields between ratings than there were in the year or two immediately after the date of rating.

Thirdly, as time moves away from the base year, there are wider ranges in the yields of bonds of given ratings. To illustrate, if A+ bonds yield from 4.00% to 6.00% in the first year, they may yield from 3.00% to 10.00% in the fourth year. And this tendency is magnified by the fact that in giving the yields for specific issues in this study, issues that had been

defaulted were eliminated from consideration both in the ranges and in the averages. Statistically, the yield on a defaulted bond is zero—but it cannot be called zero in making up average yields. Consequently, the yield record might properly be considered to have been larger than it appears to be in the present computations. The principal point here, however, is that as time goes on, bonds of given ratings show yield ranges which widen with time.

It is also clear that the yields on all bonds irrespective of rating, tend to move in the same direction at the same time, a point which emphasizes the effect of general market factors excluding the question of quality. It is found, however, that although bonds of all ratings tend to move in yield at the same time and in the same direction, the degree of movement may differ markedly. During periods of falling bond prices the yields on low-rating bonds tend to rise more than the yields on high-rating bonds. During periods of rising bond prices the yields on low-rating bonds tend to decline more than the yields on high-rating bonds. And during periods of easy money rates the difference between the yields of low-rating and high-rating bonds tends to contract. The movement in very-high-rating bonds during recent years has been somewhat disturbed, from the point of view of this observation, because a much greater rise has occurred in the very-high-rating bonds than was to be expected. This was probably due, in part, to the nation-wide desire of banks to "improve the quality of the bond portfolio" and, in part, to the determination of the Federal Reserve banks, the Comptroller of the Currency, and State Banking Superintendents (as described Chapter 3) to confine bank commitments to bonds of the "investment ratings."

Because the chances are very great that specific bonds of a given rating may depart radically from the average of that class, the investor, if he is to make important use of ratings as his basis of bond selection, should find some additional safeguard or criterion to lessen the likelihood of his selecting an issue which is destined to a fate far worse than the average of the class.

Average Yields as Computed by the Rating Agencies.—Computation of average yields by ratings by the researcher may appear, on the surface at least, to be superfluous, for one of the chores assigned to a statistical worker in all the rating agencies except Poor is the computation of such averages. These averages are published weekly or monthly in the various publications of the rating bureaus. So extensive, in fact, is public interest in these averages that the *Commercial and Financial Chronicle* has adopted the policy of publishing the averages of one of the agencies (Moody) in its weekly editions, as has also the *Federal Reserve Bulletin* in its monthly issues.

Inquiry into the use of such average yields by ratings impresses one with their apparent importance. Most noteworthy perhaps is their recognition by the Federal Reserve Board as authoritative measures of the yields afforded by bonds of different grades. A large wall-chart of these averages (by Moody) is maintained and kept strictly up to date in the Federal Reserve offices in Washington. Perhaps one of the reasons for the Federal Reserve's interest in these average yields lies in the wide use made of the averages by commercial banks and trust companies, such use being the comparison of the yields of issues in the banks' or trust companies' portfolios with the average yields of bonds of the same alleged investment quality. If the bank or trust company finds that its A– portfolio is yielding only 5.00% on current quotations as against an average yield for A– issues of 6.00% it may come to the conclusion that it is losing, on the average, 1.00%, considering the quality of its portfolio, or, stated otherwise, that its A– portfolio is ultra-conservatively constituted. If, on the other hand, the bank or trust company should find that its bonds rated A– are yielding, on the average, 7.00% against an average yield of 6.00% for A– issues, as published by the rating agency, it may reach the conclusion that its funds are invested more cleverly than average or that they are weakly invested in high-yield issues and are therefore in a relatively vulnerable position. In such cases, corrective measures might be taken to revise the portfolio in accordance with these facts.

Similar uses are made of these published average yields by ratings by individual private investors and by trustees. In the latter instance, the trustee may find that he is either doing "too well" (obtaining an average yield far in excess of the published average for bonds of the same alleged quality) or that he is not doing the best he could do on behalf of the life tenant.

Another use for such averages is found in the literature of investment houses in comparing the yields of bonds of certain grades with those of certain portfolios, with the market as a whole, or otherwise. A typical reference, for example, is found, in the pamphlet of one investment house, in the comparison of the yields from A and B bonds as between railroads, utilities, and industrials. This comparison was made "To demonstrate the difference that quality has made in recent years in relative action of securities. . . ." [7]

In the literature of financial research these averages make appearance when one investigator assures the reader that his inductive "conclusion is supported by Fitch's Average Yield Chart." [8]

In order to compare the average yields by ratings as published by Fitch, Moody, and Standard and in order to draw whatever conclusions that are possible from the data, they are brought together in Appendix B. These averages are taken as of the nearest date to July 15, 1929. Along with these published averages are the average yields by ratings as computed for the present study, as of July 15, 1929. In all cases the averages used are simple arithmetic means. The only apparent difference between the method of the rating agencies and the method of the present study is that the averages of the former were computed by industrial groups (railroads, utilities, industrials), whereas the averages of the present study were computed for all issues.

Only a casual inspection of the tables is required to discover that there are not substantial differences in the results as between the rating agencies and the present writer. The chief

[7] Pamphlet: *Oliphant's Studies in Securities*, No. 138 (November, 1935) (James H. Oliphant & Co., New York), p. 2.

[8] George K. McCabe, "Listed vs. Unlisted Bonds: A Comparison of Yields and Market Stability," in the *Annalist*, Vol. 34, No. 869 (September 13, 1929), p. 491.

differences are between the several rating agencies; for example, the average yield for B+ industrial bonds, according to Fitch, was 6.88%; according to Moody, it was 5.98%; and according to Standard, it was 6.41%.[9] The average yield for B– industrial bonds, according to Fitch, was 8.50%; according to Standard, it was 7.57%. Moody's average yields by ratings go no lower than the B+ group. This is because Moody feels that ratings below this grade (which is often spoken of as the lowest "true investment" grade) are at times so high as to be "fantastical." This point of view is not accepted by Fitch or by Standard, both of which carry their averages as far down as B–, a rating, which, from the point of view of the United States Comptroller of the Currency, is beyond the pale of investment respectability.

By and large, however, there was practical agreement in the averages as published by the rating agencies and as computed in the present study. The disagreements, where they are found, were in the direction of lower average yields (higher market valuations) according to the rating agencies than according to the present writer's data.

In order to subject the average-yields-by-ratings procedure to further test, similar comparisons were made as of July 18, 1932, a time when the bond market was in a depressed state. For this purpose the then-existing rating on each of the 363 bonds by all three rating agencies concerned [10] was taken from the appropriate manuals and their revisions, and the yield averages were computed on the basis of this new grouping. These new data along with those of the rating agencies are likewise to be found in Appendix B.

The most striking observation to be made of these comparisons is that in practically all cases the averages as published by the rating agencies were substantially below those found in the present investigation. Although, using Standard's averages, there was practical agreement between the rating agency's and the present writer's average yield in the A+ group, there was a difference of 0.61 in yield in the A group.

[9] It is to be noted, however, that Standard's industrial averages include real estate bonds.

[10] One agency (Poor) was omitted because it publishes no such averages.

In the A– group, the difference amounted to 1.17; in the B+ group, to 4.00. In the B rating, the difference between the yield shown by the rating agency and that shown by this study amounted to 6.60, while in the B– class the yields showed a differential of 10.15. In considering these amazing variations, it should be remembered that defaulted issues, irrespective of rating, are eliminated from the computations—a practice which should tend to bring the average yields shown by the rating agency and those shown by the present study more nearly into agreement.

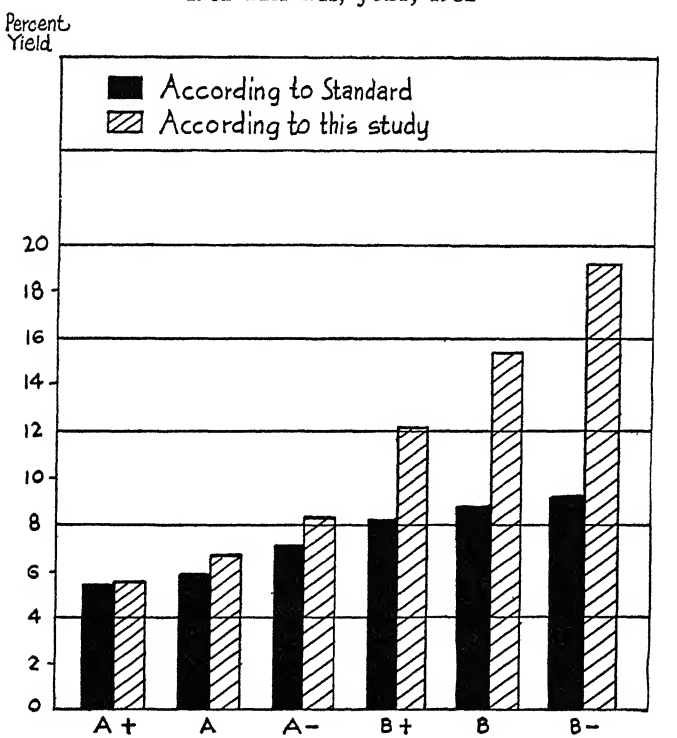
The second outstanding observation possible from the data in Appendix B is that the differences in average yields increase as the ratings proceed downward—that is, there is a greater gap between the rating agencies' published averages and those of this study as the ratings proceed step by step lower. The reason for this phenomenon will be discussed below.

Still another point of interest is that there was much greater disagreement in 1932 between Fitch, Moody, and Standard as to the average yields for bonds of specific ratings than there was in 1929. According to Fitch, for example, all B– industrial bonds in 1932 yielded 11.29%; according to Standard, the comparable yield was 9.03%. Differences of this kind abound in the tables referred to. From the evidence assembled in this study, it is possible to infer that these great differences were due *chiefly* to the methods of computation.

Though there are some differences in the way Fitch, Moody, and Standard publish their averages, they are not substantial. Fitch's averages are given according to the three principal industrial groupings (railroads, utilities, industrials) for all ratings from A+ through B–. Moody's averages are given by the same industrial groupings, but only through B+, and, in addition, Moody gives a total average (the alleged average for all bonds), which is but the mean of the averages of the three groupings by industries. Thus the Moody averages for A+ bonds for the middle of July, 1932 was given as follows: railroads, 5.73%; utilities, 4.76%; industrials, 5.23%; total, 5.24%. The 5.24% yield for all bonds is but an arithmetic mean of the preceding averages. The average for

all bonds obtained in this way is not so precise as it might be, but in general it approximates the average that would be obtained by a more exacting method. Standard's averages are given by the same industrial groupings through the B– rating, and also for all bonds.

CHART 3. AVERAGE YIELDS OF CORPORATE BONDS BY STANDARD 1932 RATINGS, JULY, 1932



Because Standard's are the only averages which are published in the form of totals and at the same time are carried as low as the B– rating, Standard's averages for all industries combined were selected for charting along with the averages computed in the present study. This is done in Chart 3.

The principal points of interest in Chart 3 are that the rating agency's published averages are lower than those of the

present investigation and that the differences increase in magnitude as the ratings proceed step by step lower.

Why, the observer may inquire, was there so much disagreement between the rating organizations as to the average yields by ratings in 1932 when they were in more or less agreement in 1929? Why, also, should the three organizations be so far removed in their averages in 1932 from the averages computed by the present investigator? The answers to both of these questions are contained in two phases of the rating agencies' practices. Both have to do with method of computation.

Methods of Computation.—Reference to Moody's average yields by ratings shows that in not one of the 192 months from 1919 to 1935 did the published average yields of bonds of given ratings vary in the slightest degree from the results to be expected under the theory that bonds of higher quality afford lower yields than bonds of lower quality. This principle is carried out exactly in the 832 weeks of rating yields, involving 3,328 average-yields-by-ratings figures computed by Moody during that period.[11]

Explanation of this phenomenon is made by Moody in its statement that, "Whenever ratings are changed or individual bonds sell considerably and consistently out of line with the average, substitutions are made and proper correctors applied in order to keep the series on a comparable basis." [12] What the "proper correctors" are, Moody declines to divulge, though it has no objection to making public its substitutions. And although it is not specified in print, acknowledgment is made of the fact that a change in marketability may effect a substitution.

Similarly, some explanation is offered by Standard in its statements that it sometimes applies "a current return to those issues quoted at abnormally low prices" and that only "active" bonds are used.[13] It is further stated that "No unusual yields due to conversion privileges, redemption, early maturity, or

[11] Data prior to 1919 are not available. The figures from 1919 to 1935 are published by Moody in mimeographed form.
[12] Moody's *Weekly Bond Letter*, No. 8 (February 16, 1931), p. B-276.
[13] *Standard Bond Investments*, Industrial Section, August, 1931.

other special causes have been included in the averages." [14] As otherwise stated by one of the rating executives, to use unusually high yields would "knock the averages askew."

As to Fitch, no such information is forthcoming. The Fitch averages nevertheless are very widely used.

The fact is, then, that elimination of issues showing unusually high yields for one reason or another is responsible, in part, for the uniformity of the yields in relation to each other. When such elimination is effected on the ground of changes in rating there appears to be good basis for it, provided that the purpose of the publication of such average yields by ratings is that they may serve as an index to current conditions in the money market. It is clear, however, that the device of elimination for other reasons may easily bring the averages into line with each other in exact accordance with the theory of yields in proportion to ratings—a circumstance which may not always be justified, as is implied in Chart 3.

Substitutions.—As explained in the Moody statement, "Whenever ratings are changed . . . substitutions are made. . . ." [15] This is to say that in most cases in which the agency eventually finds itself to have been in error as to a bond's proper rating and a new rating is assigned, the averages are adjusted so that they may be more truly representative of the rating group. The same practice is followed by Fitch and by Standard.

The most complete information on this subject emanates from the Moody offices. Information from Fitch is so slight as to be negligible. Standard merely advises that "all bonds listed in the Industries Section of *Standard Bond Investments*" comprise the list going into the averages, but this assertion is modified by the fact that "no unusual yields" are permitted to pass under the portals of the "stock model" mill where yields on similar issues are fabricated, resulting in the emergence of average yields by ratings that maintain an astounding uniformity in that they never overlap.

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[14] Moody's *Weekly Bond Letter*, No. 8 (February 16, 1931), p. B-276.
[15] *Ibid.*

Moody, however, recognizing the far-reaching effects of the use of these averages by banks, other institutional investors, and individuals, has in part lifted the curtain that formerly secreted the constituent issues of the averages. This gesture of frankness is made "in view of the interest displayed by Clients . . . ," [16] and the investor is assured that in the future Moody "will publish in these columns any changes made in the list." [17] Although Moody has not followed this promise to the letter, it has done so more or less indirectly.

By making a list of the announced removals and substitutions and by comparing revised lists as published by Moody, with the earlier lists, the investigator is able to compile a record of changes in the list. Should the investigator compare the issues that were removed with those that were inserted he would find such a compilation very useful. When price and yield are tabulated alongside the various shifts in the constituents of the list, interesting results are obtained.

The period chosen for this experiment was that of greatest eruption in the bond market: July, 1931 to July, 1932. For convenience, the exact dates taken were the testing dates used in the present study: July 20, 1931 to July 18, 1932. The removals and substitutions in this period, together with the dates of notification of changes, the prices of the bonds on that date, and the corresponding yields are shown in Appendix C. A more concise and exact view is obtained by gathering into Table 34 the average yields of the removed and the substituted issues.

TABLE 34. MEAN YIELDS OF BONDS REMOVED AND BONDS SUBSTITUTED IN MOODY'S AVERAGE-YIELDS-BY-RATINGS TABLES, JULY 20, 1931 TO JULY 18, 1932

Rating	Removed	Substituted
A+	5.4	5.1
A	6.7	5.4
A—	9.5	7.0
B+	13.6	8.8

[16] *Ibid.*
[17] *Ibid.*

It is evident that the removed issues were yielding substantially more on the average than the substituted issues in each of the four ratings at the time when the substitutions were made.

To compare the specific removals with the specific substitutions side by side would be a most interesting procedure. Such comparison is precluded, however, by the rating agency's failure to publish such changes consistently. Rather, it sometimes publishes new lists of the then constituent issues. Consequently, the investigator is unable to ascertain which specific issues were exchanged against each other. Likewise, the investigator is unable to state the exact date of change. In the computations in Appendix C, it was assumed that the changes were made on the dates when it became possible for the investor to check the list.

It is possible, however, to compare the yields of issues removed against those of issues substituted as of the same dates of notification even though it is not always possible to designate one specific issue against another specific issue. It is of interest, for example, that the highest yield of any issue removed from the A+ average as of February 23, 1932 was 7.2% (Royal Dutch 4s-1945), while the highest yield of any issue substituted in the same list and as of the same date was 5.8% (Atlantic Coast Line 4s-1952). Similarly, one may refer to numerous examples in the A list. As of July 11, 1932, the highest yield of any issue removed was 15.4% (Crane Company 5s-1940), while the highest yield of any issue substituted was 6.5% (Baldwin Locomotive 5s-1949). In the A– list, one finds the highest yield of any issue removed as of June 1, 1931 to have been 11.3% (St. Louis-San Francisco 4½s-1978) as against the highest substituted of 5.8% (Chicago & Alton 3s-1949). In the B+ list, the changes were extreme. As of June 1, 1931, the highest yield removed was 13.9% (Phillips Petroleum 5¼s-1939) as compared with the highest yield substituted of 5.9% (West Texas Utilities 5s-1957). In the same list one may find, among many other comparisons, the highest yield removed as of February 23, 1932 as 34.5% (Erie 5s-1967) opposite the highest yield sub-

stituted of 14.8% (Southern Pacific 4½s-1981). Looking at the detailed removals and substitutions (Appendix C), one immediately finds equally illuminating examples on the basis of lowest yields removed as against lowest yields substituted.

The computations in Appendix C and the resulting Table 34 are offered as conclusive evidence that the rating agencies' average yields by ratings gain in the direction of maintaining the principle of increasing yields with poorer-rated bonds. In an extended decline in the bond market, such as took place in the period of 1931-1932, issues of low yields may be substituted, if desired, for those issues that perchance have gone, in the agency's opinion, too far in the direction of the market trend. Indeed, the process may operate likewise in the other direction: issues that have gone, in the agency's opinion, too far in the direction opposite to that of the general market trend may be removed in favor of those which have maintained more nearly what the rating agency may consider "equilibrium."

Starting with the 120 issues which were included in the averages as of July 20, 1931, 112 issues were removed and 112 substituted during the one year following. There is no intention here to imply that there is anything illegitimate about this practice. The purpose of this phase of the discussion is to show conclusively how averages are maintained, by the two devices described, at whatever levels the rating agency considers to be "representative." As a matter of fact, Moody has recently admitted the effect of this process when it called its clients' attention to the substitutions, as shown in the following quotation:

> As some Aaa bonds were moved to rating groups a step or two lower, and other Aaa issues substituted, the Aaa group tended to become "refined" in the sense that it was composed of the most "solid" issues, that is, those which consequently were selling on relatively the lowest yield basis, or the "Aaa-est" of all Aaa bonds. For this reason, the present yield average of Aaa bonds, while it is truly representative of bonds now so rated, is not *strictly* comparable with a yield average of bonds which were rated Aaa prior to the depression.[18]

[18] *Moody's Investment Survey*, No. 11 (February 5, 1934), p. 1466.

Significance of Changes.—The significance of the elimination of issues "out of line" and of the substitution of others, when ratings of included bonds are changed, is indicated by the fact that such practices destroy

> the usefulness for some purposes of indexes of yields or prices derived from them. Such indexes cannot be properly used, for example, to represent the movement of the yields or prices of a fixed portfolio of bonds falling within a given quality standard at some past period of time.
>
> So far as I know, no indexes exist which enable us to trace through the depression the movement of either the yields or the prices of an identical portfolio of bonds of specified type and quality. For certain purposes this sort of index is highly desirable. It is, for example, the only kind that can be used with any degree of propriety in a specified type of bond portfolio acquired before the depression by a bank, let us say, and held intact subsequently.[19]

It is clear, of course, that any elimination of "unrepresentative" yields, any substitutions of bonds comprising the group upon which the averages are based, irrespective of the reason for the change, invalidates the use of the averages for the purpose of determining with reasonable accuracy whether a recently acquired portfolio of bonds of a specific rating is in line or out of line with all other bonds of the same rating at the time of acquisition of the portfolio. No rating agency would profess otherwise. Nevertheless, there have been attempts by misguided investors to use the averages for that purpose, which, evidently, was one of the reasons for Terborgh's remark.

The casual observer of the rating system might point out that any study of the price-behavior of bonds by ratings is a superfluous task, that such behavior is already known through the channel of average yields by ratings as published by the rating agencies. This, however, is not entirely a tenable conclusion, for the published average yields are based upon computations which make the averages of value only in judging the current condition of the money market, and even then with qualifications.

[19] G. W. Terborgh, at that time (September 9, 1933) Research Associate, Federal Reserve Board, in a report to an official of the Federal Reserve Board.

CHAPTER 9

RATINGS AND DEFAULTS

Background.—As stated by one agency its ratings "convey in varying degrees the certainty of the payment of principal and interest." [1] Stated in more detail, this is to say that bonds of successively higher ratings are less likely to be defaulted than bonds of successively lower ratings. The same assurance is given in similar language by the other rating organizations. The one point about which all rating officials agree as to a proper test of the efficacy of ratings is the default record. Some openly admit market fluctuation as a proper test, most of them reluctantly admit yield (which is but another phase of market measurement), but all admit the criterion of defaults.

Statistical Tests.—In order to examine the record of the ratings from a default point of view, the fact of default on specific issues was noted in the various financial manuals. For the purposes of this study, default is defined as the non-payment of interest in full when due. Under this definition, for statistical purposes, deferment is default as is outright non-payment itself. The non-payment or deferment of principal would constitute default, but no maturities were involved in any of the bonds of the testing portfolio during the testing period.

In order to obtain a clear conception of the default record as to the different ratings and as between rating agencies, the record was converted from absolute terms to relatives. The number of defaults that occurred in a given time in each rating was divided by the number of issues carrying that rating, and the quotient was taken to represent the default ratio: the ratio of the number of defaults in a given rating to the num-

[1] The *Fitch Bond Book*, 1931, unnumbered page opposite Foreword.

ber of issues to which that rating had been assigned. By 1931, for example, one default had occurred in the entire group of 363 issues. This issue was among the 17 issues rated by Fitch as B. The 1931 default ratio for the Fitch B rating, therefore, was 1 ÷ 17, or 0.06.

The Record.—According to accepted theory, defaults, if they appear at all, should occur in greater proportion as the ratings proceed successively downward. More defaults should be registered at a given time in C+ bonds than in B– bonds. And, as Graham and Dodd have set forth, the ability of a corporation to meet all of its obligations "should be measured under conditions of depression rather than prosperity." [2] So, likewise, it should be held, in connection with tests of ratings as to defaults, that the ability of the rating agencies correctly to evaluate the safety of a bond for more than a short period of time should be measured under the same conditions.

At the outset of this study (1929), there were no defaults in any of the 363 issues. By 1930 there were still no defaults. By 1931, only one default had occurred in the 363 issues. This defaulted issue had been rated B by three agencies, B– by one. No great significance can be attached to the fact that the default occurred two ratings higher than the lowest rating found in use in the 363 bonds included, for the B rating is one which is supposed to be assigned to speculative bonds anyway.

In view of the complete lack of defaults at the outset of the study (1929) and in 1930, and the existence of only one default in 363 issues by 1931, it is considered unnecessary to present such data statistically in tabular form.

By 1932, however, eight defaults were to be found in the 363 issues, giving a default ratio for the total of 0.02. The detailed ratios of these defaults by ratings are to be found in Table 35. Using the Fitch record as an example from this table, the default ratios by ratings were as low as 0.04 for A– bonds, as high as 0.33 for C+ issues. The defaults in-

[2] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. 67.

TABLE 35. DEFAULT RATIOS OF 363 BONDS BY 1929 RATINGS, JULY 18, 1932
(Unit=1%)

1929 Rating	Fitch	Moody	Poor	Standard
A+	0	0	0	0
A	0	0	0	0
A—	4	3	0	3
B+	0	2	8	3
B	12	8	5	4
B—	25	0	14	6
C+	33	–	–	0
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	100
Unrated	13	11	17	100
All	2	2	2	2

TABLE 36. DEFAULT RATIOS OF 363 BONDS BY 1929 RATINGS, JULY 17, 1933
(Unit=1%)

1929 Rating	Fitch	Moody	Poor	Standard
A+	3	1	3	5
A	11	3	3	9
A—	6	11	6	3
B+	5	7	11	10
B	29	16	18	4
B—	25	50	14	12
C+	33	–	–	25
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	100
Unrated	13	17	17	100
All	7	7	7	7

creased with successive rating steps downward, though this confirmation of the default principle was not strictly true of all the rating agencies.

In 1933, of the 363 issues, 26 were in default—a ratio for the total of 0.07, but, as shown in Table 36, the defaults were to be found, in all of the agencies represented, in ratings as high as A+.

The expected relationship between defaults and declining ratings was not confirmed in any agency, though confirmation was closer in some than in others. In the Fitch record, the default ratio was 0.03 for A+ bonds, 0.11 for A issues, 0.06 for A–, 0.05 for B+, and so on, ranging up to 0.33 for C+ bonds. It is clear that, in 1933, A bonds had twice as bad a default record as A– or B+ issues, which is clearly out of line with the alleged probabilities.

By 1934, 38 issues had been defaulted, representing, as shown in Table 37, a default ratio of 0.10.

The defaults ranged, in Fitch ratings, from 0.03 for A+ issues to 0.50 for B– issues. The progression, however, was not orderly, though it was not entirely a record of confusion. Standard's A bonds had a default ratio of 0.14 as against 0.05 for A– bonds and only 0.04 for B bonds. This is to say that while about one in 7 of Standard's A bonds were in default at the end of five years, only one in 25 of its B bonds were in such condition.

The number of defaults in 1935, the closing year of this study, had increased from 38 to 43, representing, as shown in Table 38, a default ratio of 0.12.

It will be observed that the range in Fitch ratings was again from 0.03 for A+ bonds to 0.50 for B– bonds, but that Fitch's A– bonds with a ratio of 0.08 and the B+ bonds with a ratio of 0.20 performed markedly better than Fitch's A bonds which recorded a default ratio of 0.22. This extreme ratio was surpassed only by the record of the non-investment B, B–, and C+ groups.

Moody's range was from a 0.01 ratio for A+ bonds to 0.50 for B– bonds, and only the A– bonds with a ratio of 0.08, compared to 0.18 for the B+ bonds, marred the regular

TABLE 37. DEFAULT RATIOS OF 363 BONDS BY 1929 RATINGS, JULY 16, 1934
(Unit = 1%)

1929 Rating	Fitch	Moody	Poor	Standard
A+	3	1	3	5
A	11	3	3	14
A—	8	18	14	5
B+	15	12	15	15
B	35	24	23	4
B—	50	50	43	18
C+	33	–	–	50
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	100
Unrated	13	17	17	100
All	10	10	10	10

TABLE 38. DEFAULT RATIOS OF 363 BONDS BY 1929 RATINGS, JULY 15, 1935
(Unit = 1%)

1929 Rating	Fitch	Moody	Poor	Standard
A+	3	1	3	5
A	22	8	7	9
A—	8	18	14	15
B+	20	14	15	13
B	35	28	32	12
B—	50	50	43	19
C+	33	–	–	50
C	–	–	–	–
C—	–	–	–	–
D+	–	–	–	100
Unrated	13	17	17	100
All	12	12	12	12

progression. Poor's range in default ratios was from 0.03 for A+ issues to 0.43 for B– issues, and the progression was unmarred. Standard's record was the weakest in the comparative record for A+ bonds, Standard's ratio of default being 0.05, or one in 20. Standard's range was from a ratio of 0.05 for the highest grade investment issues to 0.50 for the entirely speculative C+ rating group.

Stated in another way, approximately one in five in each of the A and B+ groups of Fitch were in default at the end of six years, and about one in 12 of the A– bonds. One in 11 of Standard's A bonds were in default at the end of six years, about one in 7 of the A– bonds, and one in 8 of the B+ and B rating groups.

It is entirely logical to inquire at this point whether the rating agencies warned the investor of the probability of default, through changes in the ratings on those issues which were rated higher than the "very speculative" grades. In reply, it may be stated that a careful examination of the record of all the defaulted issues for all years and for all agencies reveals that the rating agencies' score was practically 100%, meaning that in all cases all the agencies lowered their 1929 ratings on later-defaulted issues to default-possible ratings before default actually occurred. In most cases the rating declines were gradual (one grade at a time), though in some cases two rating steps lower were recorded in one change. Likewise, in most cases the change in rating prior to actual default took place only a short time (generally one to four or five months) before default occurred.

The detailed figures from which the above-described facts were taken, excepting those relating to rating changes, are to be found, as noted above, in Tables 35 to 38. It is clear from examination of these tables that, on the whole, the principle of more defaults as the ratings proceed successively downward is tolerably well confirmed—that is, departures were found, but in view of human fallibility the record was surprisingly good. And that, it would seem, is quite remarkable when it is considered that a rating is, after all, a mere pronouncement of judgment. As pointed out by the Federal

Housing Administration in connection with a practically analogous process,

> Risk rating involves forecasting and prediction . . . the rating of loans in accordance with mortgage risk involves the determination of the chances of default, and possible avoidance of loss in such event, by attempting to foresee the probable and possible ways in which failures and losses may occur. The rating of risk in a mortgage loan is a complex process.[3]

In connection with the default record, it is interesting to compare the remarks of Meader:

> In order to put [a certain] equation to practical use, let it be assumed that when dealing with high-grade ("AAA" and "AA") bonds, the probability of an accident is one in ten years, or 0.1 per annum, and that in the event of accident 50 per cent of the face value of the investment will be lost. With the medium-grade ("A" and "BBB") bonds, let it be assumed that there will be 0.2 accidents per annum; that 75 per cent of the face value of the investment will be lost in event of accident. In the case of the low-grade ("BB" and "B") bonds, assume an accident every two and a half years or 0.4 accidents per annum, with the entire investment lost in case of accident.[4]

From the results of this study, in both the default record and the market record, little support is found for Meader's assumptions. The present writer is not willing to go so far as to say that Meader's assumptions are definitely unsupportable, for the present study covers a period of only six years. These six years, nevertheless, represent a period of such upheaval in all markets that there appears to be some basis for questioning Meader's proposition.

Market Anticipation of Defaults in Relatively High Ratings.—One question which naturally arises at this point is whether there was, in bonds of high ratings, anything in the market standing at the time of rating that might have indicated the likelihood of default.

In 1932, it has been pointed out, there were eight defaults of which three occurred, in terms of Fitch ratings, in the A–

[3] Federal Housing Administration. *Underwriting Manual* (Federal Housing Administration, Washington: 1935), Pt. I, Par. 612.

[4] J. W. Meader "Diversification: A Sound Principle Often Carried to Unwarranted Extremes," in the *Annalist*, Vol. 44, No. 1125 (August 10, 1934), p. 195.

group, a class rated as "sound" investments. In view of the fact that 77 bonds of the A– group had not been defaulted, one is led to wonder whether there was any indication in 1929 that the market discounted the high rating of these bonds. These three obligations, all issues of the Wabash Railway, were valued in 1929 on yield bases of 5.33%, 5.26%, and 4.96%, respectively. The average yield for all Fitch A– bonds at the time was 5.64%. In view of the fact that the market valued every one of these defaulted bonds higher than the average of their class, it is evident that the high ratings were not discounted. Even as late as 1930, when the average yield for all Fitch 1929 A– bonds was 5.44%, the yields on these Wabash bonds were 5.27%, 4.95%, and 4.88%. Of course, these issues may have been valued highly because of the character of the collateral. Despite the default, principal and income may be entirely secure, but investors do not look forward eagerly to default even in issues which are secure as to their eventual payment of principal and interest. Further study of this phenomenon appears desirable.

Of the 147 issues that Fitch rated A+ in 1929, four had been defaulted by 1933. The yields on these issues in 1929 were 4.86%, 4.69%, 5.16%, and 5.07%, against an average yield for all A+ issues of 4.90%. In other words, at the time when the A+ rating was applicable, these bonds were valued in the market at about the same level as all other A+ issues. Even as late as 1930 they were valued higher (at lower yields) than the average of 1929 A+ bonds.

In the Fitch A group, seven of the 64 issues had been defaulted by 1933. The average 1929 yield for all Fitch A issues was 5.25%. For the seven issues that were defaulted in 1933, the 1929 yields were as low as 5.22% and as high as 5.82%, not widely different from the average of the class.

By 1934, and likewise in 1935, five of the 147 Fitch A+ issues were in default. Their 1929 yields had been 4.86%, 4.69%, 5.16%, 5.07%, and 5.40% against an average 1929 yield for all A+ issues of 4.90%. It should be noted at this point that the range of yields for all Fitch A+ bonds was from 4.23% to 5.90%. In other words these five A+ bonds,

destined to default in or before 1934, were valued in the market in 1929 at more or less the same level as all other A+ bonds. How much effect the rating had in maintaining the high market value can never be shown, but it is obvious that no claim can ever be made that the market discounted the rating.

The object of this phase of the discussion is to throw some light on the question of whether the market anticipated default in spite of the high, in some cases highest of the high, ratings. The answer is apparently that bonds of high ratings that were destined for default in from three to five years were valued by the market at about the same level as all other bonds of the same rating. From this fact it may be inferred that the ratings probably had some effect in the market's support of these ill-fated issues.

CHAPTER 10

"PESSIMISTIC" RATING

In preceding chapters, the record of bond rating over the past six years has been described and interpreted. Evidence has been presented that rating agencies have been both successful in general and very inadequate in particular in protecting investors against loss. The record of the ratings from the viewpoint of market value, yield, and default has been investigated and the conclusion reached that the investor's reliance upon ratings as a protection against financial loss leaves much to be desired. Although ratings in terms of averages appear to have made a favorable showing, declines in specific bonds of very high ratings were so drastic as to cause the investor to wonder whether there may be some way of refining his use of the ratings to the end that a record superior to that of any one of the rating agencies may be obtained.

The Best Rating Agency.—Looking back at the records of the various rating bureaus, it is clear that some agencies did better than others in guiding the bewildered investor. Even where such a superior record is found, however, the footprints of calamities remain sharply impressed upon the highways of the past. The record of the most successful agency is not good enough to call forth the admiration of the investor who has neither the time nor the inclination to make his own analyses (even if he were competent to do so) nor the facilities for their constant revision.

There is some doubt whether so simple a question as "Which is the best rating agency?" could be answered. Much would depend on what is meant by "best." Does "best" imply that agency whose ratings fared better in market-action averages, or, possibly in terms of market-action ranges? Is the best agency the one whose ratings showed the lowest average yields

or, possibly, the least ranges in terms of yields? Or is it the agency which showed the best default record? Is it the agency which announced the greatest number of rating changes or the least number of such changes? Could such a question, then, as "Which is the best rating agency?" be answered in a really satisfactory manner if the answer were based upon statistical tests covering these several points? There is much doubt that it could.

It is not without reason, therefore, that the investor inquires as to whether there may not be some way in which he can use these summations of quality with better results. There are several such ways.

The Pessimistic Theory.—One of these would be to adopt as the proper rating of a bond that rating which is the lowest assigned by any agency. In other words, one would accept the most "pessimistic" rating. Assuming that the investor harbors the "calamity point of view"—and most bond rating users do—this would seem to be a reasonable procedure. It rests upon the assumption that four "minds" are better than one, and on this basis the feasibility of using the most conservative appraisal of all the rating agencies to greater advantage than could be done for any one agency appears both reasonable and attractive. Indeed, it appears entirely possible that the greatest protection would be obtained by accepting only the lowest rating assigned. On this plan, then, the investor would accept as the proper rating for a bond that rating, of all four organizations, which was the lowest assigned. Thus a bond rated A–, A–, A, and A by the respective agencies would be regarded by the investor as an A– bond.

In this connection it is of interest to note a more or less similar plan [1]—similar in that it combines the use of all the ratings assigned to a given issue—used by Reierson,[2] by Badger and Guthmann,[3] and by others. This is the method of "composite rating." This plan is used in similar fashion by

[1] *Supra*, Chapter 5.
[2] Roy L. Reierson, *Measurement of the Price of Public Utility Capital:* 1919-1933. An unpublished doctoral thesis, Northwestern University, 1935.
[3] Ralph E. Badger and Harry G. Guthmann, *Investment Principles and Practices* (Prentice-Hall, Inc., New York: 1936), p. 66.

some of the investment houses in bringing specific issues to the attention of their customers. The composite-rating plan involves an averaging of the ratings assigned by all the rating agencies. Since letters cannot readily be averaged, different weights are given to the respective ratings, Reierson's system carrying the following values: [4]

A+ 7	B+ 4
A 6	B 3
A− 5	B− 2
Under B− 1	

Thus, if a given bond were rated A, A, A–, A– by the four rating bureaus, the composite rating or rating value would be 5.5. In this way any ultra-conservative or ultra-optimistic

TABLE 39. DISTRIBUTION OF ISSUES BY 1929 PESSIMISTIC RATINGS, JULY 15, 1929

Rating	Number
A+	48
A	83
A—	106
B+	64
B	36
B—	19
C+	5
C	–
C—	–
D+	1
Unrated	1
All	363

estimate on the part of one agency would be "ironed out" or "smoothed off" in the averaging. This plan, however, while it may have some value in deflating over- or underestimations, fails to meet the requirements of the investor whose investment philosophy is based upon the previously mentioned "calamity point of view" because it serves only partly to provide the high standards of protection afforded by the scheme of pessimistic rating.

[4] Roy L. Reierson, *op. cit.*

Statistical Tests.—In order to test the effectiveness of the latter method, the 363 bonds used statistically in the present study were subjected to the pessimistic procedure. Bonds were grouped according to their most pessimistic rating, and computations were made of the market action, yield, and default records on this basis.

The first observation of interest is that the frequency distribution of bonds by pessimistic ratings is much more in the nature of a "normal" distribution than any of those preceding. The results are contained in Table 39.

The Market Action Record.—As in the previous examination of the market record by ratings, the prices used in studying the effectiveness of pessimistic ratings were taken as relatives of the base-year, and these relatives were averaged to obtain results comparable to those formerly derived. These averages are shown in Table 40.

TABLE 40. AVERAGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 PESSIMISTIC RATINGS, JULY 14, 1930 TO JULY 15, 1935
(July 15, 1929 = 100.0)

1929 Pessimistic Rating	July 14 1930	July 20 1931	July 18 1932	July 17 1933	July 16 1934	July 15 1935
A+	104.7	107.3	85.6	100.4	108.8	107.1*
A	104.0	104.1	70.3	91.9	98.6	98.6
A—	103.1	99.3	65.6	81.7	85.5	89.0
B+	101.6	93.2	50.9	75.4	78.2	85.6
B	98.4	87.2	47.7	72.3	71.5	76.9
B—	94.8	83.5	48.5	73.8	77.8	84.6
C+	87.4	64.5	23.6	55.5	51.9	59.6
C	–	–	–	–	–	–
C—	–	–	–	–	–	–
D+	94.1	57.6	12.9	15.3	20.7	36.5
Unrated	85.9	55.5	12.6	27.1	23.0	21.4
All	102.0	97.6	63.2	83.4	87.6	91.1

* Includes in average a called bond at the call price although retired prior to date of tabulation.

Comparison of these results with those shown in Tables 8, 10, 12, 14, and 16 in Chapter 7 clearly indicates that there

was a more "orderly" change in market value in *any* year than when the ratings were taken by separate agencies. This is to say that, on the whole, the gaps in the market action between ratings are now more even than before.

Another observation from the record of pessimistic ratings is possible from the ranges of relative market values, as shown in Table 41.

Comparison of these results with the distribution of ranges in market price relatives by ratings for each rating agency separately, as shown in Tables 9, 11, 13, 15, 17, and 19 (Chapter 7), reveals that, on the whole, such ranges by pessimistic ratings were narrower throughout the entire six-year period than were the comparable ranges for the ratings of each agency separately. This is predominately the case, as might be expected, in the upper ratings—for the most part, from B+ up.

From these findings it may be inferred that the use of pessimistic ratings affords the investor a somewhat better chance of avoiding issues that go to extremes in market performance than does the use of any one agency's ratings. In other words, the use of pessimistic ratings tends to avoid the possibility of obtaining a bond that has been overrated by the investor's favorite agency. To accept as proper the lowest rating assigned to a given issue by any rating organization is to embrace extreme conservatism in the use of ratings—a sensible policy when one considers that ratings are consulted as a means of avoiding loss.

The Yield Record.—As already stated, market price alone does not tell the whole story. Yield must be considered in any comparison of bonds on a market basis.

For purposes of comparison the 363 bonds of the present study were sorted according to pessimistic ratings, and the yields averaged. The results are shown in Table 42.

By comparing Table 42 with Tables 20, 22, 24, 26, 28, 30, and 32 (Chapter 8), it is immediately apparent that the valuations on the pessimistic basis were higher (yields were lower) than on a single-agency basis, which is, of course, what was to be expected. The fact, however, that this higher valuation

TABLE 41. RANGE OF MARKET VALUE RELATIVES OF 363 BONDS BY 1929 PESSIMISTIC RATINGS, JULY 14, 1930 TO JULY 15, 1935
(July 15, 1929 = 100.0)

1929 Pessimistic Rating	July 14 1930	July 20 1931	July 18 1932	July 17 1933	July 16 1934	July 15 1935
A+	108.1– 99.5	112.1–90.7	101.7–31.8	112.2– 65.1	123.6–72.6	132.5–41.5
A	107.2–101.1	111.7–93.4	103.5–22.2	111.5– 39.4	121.5–27.8	124.4–45.5
A—	112.5– 97.0	112.2–63.6	102.0–11.2	108.9– 23.9	117.7–19.2	127.5–11.6
B+	110.1– 88.2	116.1–55.7	113.6– 5.2	130.4– 25.3	135.4–16.1	146.3–11.3
B	111.7– 69.0	117.6–32.1	82.8– 6.8	113.9– 21.6	120.5–16.1	144.7–13.9
B—	120.6– 67.9	108.9–20.2	83.8– 3.2	110.6– 22.0	119.7–11.2	140.5– 8.1
C+	101.4– 59.6	79.7–39.3	45.7– 7.3	71.8– 13.7	82.7– 7.4	105.0– 9.1
C	–	–	–	–	–	–
C—	–	–	–	–	–	–
D+	94.1– 94.1	57.6–57.6	12.9–12.9	15.3– 15.3	20.7–20.7	36.5–36.5
Unrated	85.9– 85.9	55.5–55.5	12.6–12.6	27.1– 27.1	23.0–23.0	21.4–21.4
All	120.6– 59.6	117.6–20.2	113.6– 3.2	130.4– 13.7	135.4– 7.4	146.3– 8.1

TABLE 42. AVERAGE YIELDS OF 363 BONDS BY 1929 PESSIMISTIC RATINGS, JULY 15, 1929 TO JULY 15, 1935

1929 Pessimistic Rating	July 15 1929	July 14 1930	July 20 1931	July 18 1932	July 17 1933	July 16 1934	July 15 1935
A+	4.80	4.46	4.34	6.27	4.82	4.16	4.24
A	4.89	4.64	4.63	8.40	5.48	4.92	4.87
A—	5.26	5.06	5.37	11.24	6.79	5.91	5.86
B+	5.81	5.73	6.66	15.68	8.54	8.15	6.87
B	6.58	6.81	8.31	19.10	9.92	9.89	9.58
B—	7.42	8.12	9.50	18.54	9.97	8.90	8.55
C+	7.42	8.01	13.32	43.03	13.39	13.76	12.97
C	–	–	–	–	–	–	–
C—	–	–	–	–	–	–	–
D+	7.90	8.49	14.09	Default	Default	Default	Default
Unrated	6.45	8.09	13.59	Default	Default	Default	Default
All	5.50	5.40	5.95	12.24	7.03	6.30	6.09

continued, on the whole, throughout the entire six-year period is a confirmation of the findings in the market action study reported above. This is to say, then, that had the investor in 1929 selected his bonds on a pessimistic basis and held them throughout the period, he would have enjoyed a higher average market valuation for his bonds at any time during the period than he would have had under the single-agency plan.

The statements made above were drawn from the data in terms of averages. One question which should be raised to complete this part of the inquiry is whether the extremities in yields by ratings were as far flung under the pessimistic system as they were under the single-agency plan. The yield ranges by pessimistic ratings are shown in Table 43. Comparing these yield ranges by pessimistic ratings with those on the single-agency basis, as shown in Tables 21, 23, 25, 27, 29, 31, and 33 (Chapter 8), one finds, in the main, somewhat narrower spreads. In other words had the investor in 1929 purchased his bonds on a pessimistic basis he would have run a smaller risk of acquiring bonds that would turn in market records at as great variance with other bonds of the same pessimistic rating than he would have done if he had purchased his bonds on a single-agency basis. In illustration, the yield for 1929 A bonds in 1934, on a pessimistic-rating basis, ranged from 3.01% to 7.33%, or a spread of 4.32%. On the single-agency plan, the comparable spreads were as follows: Fitch 7.11%; Moody, 8.43%; Poor, 8.01%; Standard, 7.95%. This is not an extreme case; it is more or less typical. As before, it is clear that this principle is more applicable in the higher than in the lower ratings.

The findings as to both averages and ranges show that greater protection, from a market point of view, was afforded the investor in the adoption of pessimistic ratings than was available to him in relying upon the ratings of any one organization.

The Default Record.—Default is a serious affair for the bondholder. Many investors regard it as more serious than depreciation in market value. In order to round out the pres-

TABLE 43. RANGE OF YIELDS OF 363 BONDS BY 1929 PESSIMISTIC RATINGS, JULY 15, 1929 TO JULY 15, 1935

1929 Pessimistic Rating	July 15 1929	July 14 1930	July 20 1931	July 18 1932	July 17 1933	July 16 1934	July 15 1935
A+	4.23–5.65	3.48– 5.49	3.85– 5.88	4.70– 16.50	3.89– 8.38	3.18– 6.45	2.35–11.00
A	4.60–5.57	4.33– 5.35	3.92– 5.95	4.45– 27.70	3.87– 7.77	3.01– 7.33	2.52– 9.10
A—	4.71–6.25	4.40– 6.36	4.23– 8.29	4.67– 46.25	4.26–17.25	3.91–11.54	2.99–25.00
B+	4.96–6.95	4.87– 8.57	4.76–13.68	5.73– 45.20	4.59–17.45	4.28–15.95	3.54–25.00
B	5.42–8.56	5.44–12.20	5.00–21.20	7.32–100.00	6.09–19.50	5.48–21.20	4.78–40.00
B—	5.66–9.97	5.65–14.95	6.31–25.00	8.18– 54.80	6.49–13.27	5.13–15.65	4.29–27.30
C+	5.29–7.76	5.52– 9.78	9.38–20.15	8.00– 75.00	10.94–17.95	10.47–18.50	7.08–23.62
C	–	–	–	–	–	–	–
C—	–	–	–	–	–	–	–
D+	7.90–7.90	8.49– 8.49	14.09–14.09	Default	Default	Default	Default
Unrated ..	6.45–6.45	8.09– 8.09	13.59–13.59	Default	Default	Default	Default
All	4.23–9.97	3.48–14.95	3.85–25.00	4.45–100.00	3.87–19.50	3.01–21.20	2.35–40.00

ent study of the efficacy of pessimistic ratings it is necessary to consider this phase of the life of the tested bonds over the period studied. The fact of default as of the testing dates was therefore noted, and the data converted into default ratios, as was done in Chapter 9. The default record on a pessimistic rating basis is shown in Table 44.

TABLE 44. DEFAULT RATIOS OF 363 BONDS BY 1929 PESSIMISTIC RATINGS, JULY 18, 1932 TO JULY 15, 1935 (Unit: 1%)

Pessimistic Rating	July 18 1932	July 17 1933	July 16 1934	July 15 1935
A+	0	2	2	2
A	0	1	1	5
A—	0	8	13	13
B+	5	10	20	16
B	3	8	11	17
B—	11	16	21	21
C+	0	20	40	40
C	—	—	—	—
C—	—	—	—	—
D+	100	100	100	100
Unrated	100	100	100	100
All	2	7	10	12

As was noted in Chapter 9, no defaults had occurred by the 1930 testing date. By 1931 there was only one default and that in the B– pessimistic rating class, representing a default ratio of .05 for that group and a default ratio of less than one-half of .01 for the entire 363 issues. In view of the absence of defaults in 1930 and their near absence in 1931, these years are omitted from Table 44.

Comparison of Table 44 with the default record on a single-agency basis, as shown in Tables 35, 36, 37, and 38 (Chapter 9), reveals that defaults were lighter on the pessimistic-rating basis. Although the same number of defaults necessarily occurred, they did not appear so frequently in the high ratings as on the single-agency basis. There were some exceptions to this observation, but, in general, the default record was conspicuously better on the pessimistic-rating basis. In 1931, for

example, one default was recorded; for three agencies this default was found in the B class, for one agency in the B– class. Consequently, the default appeared in the B– group on the pessimistic rating basis. Furthermore, the default ratio in this case was slightly lower on the pessimistic-rating basis than it was in the record of the agency which had rated this bond B–. In 1932, defaults appeared as high as A– for three agencies, but only as high as B+ on the pessimistic-rating basis. In 1933, on the pessimistic rating basis, only 1% of A bonds were in default, while the default ratios for the several agencies were: Fitch, 11%; Moody, 3%; Poor, 3%; Standard, 9%.

Conclusions.—The inference that using the lowest rating assigned to a bond should add an additional safety factor in the purchase of bonds by ratings is shown by the computations described above to be properly drawn. In view of this finding, the investor who seeks the utmost in available protection from losses in his bond portfolio would do well to adopt this procedure, assuming that he uses the ratings as his basis of bond selection.

This is not to say, however, that the most pessimistic rating is the most accurate one. It might easily be the most inaccurate, and the highest rating or the modal rating might be the most accurate. In this respect, the determining factors are the state of trade and the trend of the bond market. In a period of rising bond values, of declining defaults, and of increasing business, the highest, or most optimistic rating, may prove to be the most accurate. But, in the long run, acceptance of the lowest rating assigned by any of the agencies is likely, as has been demonstrated, to afford the investor the greatest degree of protection against loss.

CHAPTER 11

A MEASURE OF PORTFOLIO DESIRABILITY

In examining the bond accounts of member banks, the Federal Reserve banks have encountered difficulty in appraising the actual value of banks' portfolios. It has been extremely hard to compare the investment quality of the portfolio of one bank with that of another bank, the size and character of whose portfolio was different from that of the former bank. It has been difficult to conclude that one portfolio was "good"; that another, though vastly different, was likewise "good," and that a third was just a shade better. Exactly how much better could never be ascertained.

The dissatisfaction resulting from the inadequacy of such vague evaluation finally led in 1927 to the request by an officer of the Federal Reserve Bank of New York that some method be devised whereby the quality of banks' bond portfolios could be measured so that indefinite terms such as "good," "fairly good," and other loose expressions could be eliminated. About three years later, Gustav Osterhus, to whom the task had been assigned, announced his system of "desirability weights" for measuring the total investment quality of bond portfolios. The Osterhus system was used experimentally in the Federal Reserve Bank of New York and was later carried to the Federal Reserve Board which sent directions for its use to every Federal Reserve bank, and the Osterhus method has been in use in every such institution since 1930.

Method.—A basic feature of the Federal Reserve's desirability weighting system is the use and acceptance of bond ratings, as published by recognized agencies, as the final authority of the total investment quality of specific bonds. Thus, the degree of desirability of a portfolio is, in a sense, an

"average" of the ratings assigned to each of the bonds in the portfolio. The average is weighted by the amount of bonds held in the portfolio. Thus $50,000 of one issue would carry twice as much weight in the average as $25,000 of another. It may be said, therefore, that the Osterhus system obtains a weighted composite rating for the entire portfolio—composite not in the sense of an average rating of the several agencies, but rather in the sense that the total rating is representative of all the bonds in the portfolio combined, and weighted according to the amount held. With a specific bond portfolio and with the quality ratings assigned by one of the rating agencies already ascertained, it is a simple matter to determine what proportion of the entire portfolio is represented by A+ bonds, what percentage is held in A bonds, and so on. This process, in fact, is fundamental in arriving at the final "Index of Quality."

Omitting additional processes,[1] which are of interest to bank examiners but not essential in the desirability weighting process, the next step is to multiply the percentage which each rating class represents of the total portfolio by the desirability weight that has been assigned by Osterhus to that class. The product is an index of quality, so called, for each rating class. Thus, in a $1,000,000 portfolio, $100,000 of A+ bonds, with a desirability weight of 100, present an index for that group of 10.0, while $100,000 of A– bonds, with a desirability weight of 90, give an index for that group of 9.0. Then, when the respective indices are added, the sum represents the final index of quality for the entire portfolio. For illustration, we may compare the two portfolios listed in Table 45.

By the use of this device it is possible to compare one bond portfolio with another through the simple means of representing the total investment quality of each by a simple index. If such a system is both valid and workable, the indices of total portfolio quality, being far more specific than such adjectival expressions as "good" and "fair," are worth the effort involved in computing them.

[1] The matter is described with reasonable fullness in an article by Gustav Osterhus, entitled "Flaw-Tester for Bond Lists" in the *American Bankers Association Journal*, Vol. XXIV, No. 2 (August 1931), p. 67ff.

TABLE 45. EXAMPLE OF APPLICATION OF DESIRABILITY WEIGHTS TO HYPOTHETICAL PORTFOLIOS

List A

Rating	Amount Held	Percentage of Total	Desirability Weight	Index
A+	$500,000	50	100	50.0
A—	300,000	30	90	27.0
B+	100,000	10	80	8.0
B—	100,000	10	10	1.0
			Index of Quality	86.0

List B

Rating	Amount Held	Percentage of Total	Desirability Weight	Index
A+	$500,000	50	100	50.0
A—	100,000	10	90	9.0
B+	100,000	10	80	8.0
B—	300,000	30	10	3.0
			Index of Quality	70.0

Weighting.—Any claims for this system, which is, in effect, a method of rating bond portfolios as portfolios, must recognize that much depends upon the weights assigned to the respective quality ratings. It is held by the inventor that "Any chain of numbers would do, as the Index was designed to show comparative investment worth of numerous accounts." [2] If this were true, however, and the weights 100, 20, 15, 10, 5, and 0 were assigned to the ratings A+, A, A–, B+, B, and B– respectively, undue importance would be given to the highest rating. A bank having all A+ issues would assay 100, while one having all A issues would total only 20, and it is obvious from results of this study, both as to market action and as to defaults, that no such five-to-one relationship exists between the ratings. Consequently, one may conclude, contrary to the Osterhus assumption, that the efficacy of the

[2] Personal letter from Gustav Osterhus, Federal Reserve Bank of New York, to the present writer, dated August 15, 1933.

desirability weighting system does depend, in part, upon the proper assignment of weights.

As reported by Osterhus,[8] the following weights were assigned to the respective rating classes:

TABLE 46. OSTERHUS' ASSIGNMENT OF DESIRABILITY WEIGHTS, 1931

Rating	Desirability Weight	Rating	Desirability Weight
A+	100	D+	0
A	100	D	0
A—	90	D—	0
B+	80	Defaulted	0
B	50	Not Rated	0
B—	10	Not Listed	0
C+	0		
C	0		
C—	0		

The obvious points of interest in this table are the assignment upon the A rating of a desirability weight equal to that of the A+ group, the wide gap in desirability between the B+ and B classes, the even wider gap in desirability between the B and B– groups, are the conclusion that, for bank portfolio purposes, the C+ to D– ratings possess no desirability at all, as do likewise the defaulted, no-rating, and no-listing issues. The question naturally arises whether these weights have been properly assigned. This is a point which Osterhus recognizes. In his public announcement of the system he remarks that

> The desirability weights have been the subject of much discussion. There seems to be general agreement that issues rated [A+] are 100 per cent desirable as bank investment. Most persons agree also that issues rated [A] are 100 per cent desirable, although some may feel that 95 per cent would be more appropriate as [an A+] bond is better than [an A] bond. However, it is assumed here that no bank can reasonably be criticized for owning bonds rated [A]. The desirability weights of 90 and 80 for issues rated [A−] and [B+] have proved acceptable to most persons who have examined the

[8] Gustav Osterhus, *op. cit.*, pp. 67-68.

method, whereas the drop from 80 to 50 for issues rated [B] has been strongly approved by some and questioned by others.

The reason for assigning a desirability weight of only 50 to issues thus rated is that after a study of several accounts it was found that very few, in fact less than half of the issues so rated, seemed suitable for bank investment. The market action of these inferior grade bonds over the past eight or ten months have justified the rating.

No authority who has expressed an opinion on the subject has objected seriously to the desirability weights of only 10 for issues rated [B–] and 0 for the lower grades, the defaulted, the unrated and the unlisted issues.[4]

The assignment of no rating of desirability at all to the defaulted and the unrated issues is both interesting and open to question. Granting that defaulted issues are totally lacking in desirability for bank investment, doubt remains concerning the assignment of no desirability to unrated issues. According to Osterhus' table of assignments, unrated issues deserve no consideration by banks, while, on the other hand, in the directions for using the system, Osterhus advises that

> if an account includes one or more issues that have not been rated by any of these services [recognized rating agencies], obtain the necessary statistical and credit data concerning the obligor and assign a rating. Only issues of such doubtful value that no investment worth can be assigned to them should be left unrated.[5]

Such instruction, of course, assumes the ability on the part of the operator of the system to make such rating. Issues still remaining unrated, although they may possess some merit, are accorded no desirability—a practice which may be justified but which is bound to remain somewhat controversial. These methods, however, have already been accepted in the Federal Reserve System and, as Osterhus has pointed out, are based upon general agreement by members of the staff. Furthermore, as of the time of the announcement of the method, the weights had had the benefit of application to more than 600 banks' bond lists.[6]

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[4] *Ibid.*, p. 68. It should be noted in clarification of Osterhus' system that "unlisted" issues refers to "local and unmarketable" issues, not necessarily to issues which are not listed on securities exchanges. In other words, unlisted issues are those which are not listed in the rating manuals.

[5] *Ibid.*

[6] *Ibid.*, p. 67.

Does It Work?—According to the editors of the *American Bankers Association Journal*, the Osterhus-Federal Reserve "Flaw-Tester" is a

> Mechanical Device Designed to Disclose True Quality of Bank's Investment Account. Method of Computing Final Index Is Simple and Aims to Reduce Element of Guesswork to a Minimum. Has Variety of Uses in Guiding Judgment of Executives.[7]

Certainly there can be no question of the value to supervisory organizations of a more or less mechanical system which expresses the quality of the bond portfolios of the institutions coming under such supervision. Whether it functions effectively is important to all in the field of banking.

In view of the importance of the question, tests ought to be conducted to determine the efficacy of the system. Such tests, of course, should be strictly scientific in their approach and methodology. But it is extremely difficult to be entirely scientific in the conduct of tests designed to answer this question. One obstacle lies in the fact that bank portfolios, for which primarily the system was designed, are not available for inspection to individuals outside the supervisory organizations. Another obstacle is found in the Osterhus provision that bonds not rated by the rating agencies should be rated, whenever possible, by the bank examiner. No scheme of testing that would require the investigator to assign his own ratings would be acceptable as scientific. As a matter of fact, special tests are perhaps not really necessary, since tests of the market action, yields, and defaults of bonds by ratings have already been completed and reported in Chapters 7, 8, and 9 of this study. The most important findings, so far as bank supervision is concerned, are in the matters of market action and defaults.

Reference to Chapter 7 recalls that bonds, on the whole, did perform marketwise in accordance with the relative ratings assigned to them. A+ bonds, considered as a whole, enjoyed a better record than A bonds, A bonds did better than A– issues, and so on. This was true in general, not for one year alone, but for all six years covered by the present study. When

[7] *Ibid.*

these facts are related to the problem of the workability of the system here in question, one is forced to admit that the system must, of necessity, be efficacious—on the average. But, when it is recalled that, as shown in Chapter 7, the dispersions from the averages were strikingly great, even over the period of one year, the conclusion is unavoidable that the system can be considered successful only in terms of averages. Should any bank happen to possess a portfolio containing too many issues that vary widely from the average in market action, the actual record is almost bound to be in disagreement with the results anticipated by the index of quality. But it is undoubtedly true that the Osterhus-Federal Reserve device has a greater chance of success (as measured by subsequent market action) with large portfolios than it has with small ones.

With respect to defaults, it has been shown (Chapter 9) that, on the whole, defaults occurred in approximate relation to the ratings assigned. Since, however, there were no defaults, even in the low ratings, in the one year following the assignment of the ratings, no conclusions can be reached on that basis. Even by the end of the second year only one default had occurred in the entire list of 363 issues, and this one was found quite properly in a low rating: B by three agencies, B– by one. Within three years of the base year, defaults were still occurring in approximate relation to the relative ratings, although it should be pointed out that, as shown in Table 35, some ratings in some agencies began to depart from the principle, these departures having been in the A– and B+ groups. From that point on, such variations occurred in increasing numbers. Nevertheless, the ratings-default principle was tolerably well maintained, on the whole, throughout the entire six-year period. Consequently, one must conclude that the desirability weighting system should have more than a fair chance of success, especially when considered in terms of averages. Should any institution possess issues, even though well rated, which later become the "black sheep" of the portfolio, the probability is that the index of quality for that institution's portfolio will be the one that mars the record of the desirability weighting system.

It is true, of course, that desirability weightings are not primarily intended to forecast market value or market action as such, although these factors certainly are involved.

TABLE 47. NEW DESIRABILITY WEIGHTS DEVISED FOR FEDERAL RESERVE BANKS *

Class	Description	Weight
I.	A+ bonds with maturities of not over 5 years.....	100
II.	A+ bonds with maturities of from 5 to 12 years.....	95
	A bonds with maturities of not over 4 years.	
III.	A+ bonds with maturities of more than 12 years.....	90
	A bonds with maturities of from 4 to 10 years.	
	A– bonds with maturities of not over 3 years.	
IV.	A bonds with maturities of over 10 years.....	80
	A– bonds with maturities of from 3 to 7 years.	
	B+ bonds with maturities of not more than 2 years.	
V.	A– bonds with maturities of more than 7 years.....	60
	B+ bonds with maturities of from 2 to 5 years.	
	B bonds with maturities of not more than 1 year.	
VI.	B+ bonds with maturities of more than 5 years.....	35
	B bonds with maturities of from 1 to 3 years.	
	B– bonds with maturities of not more than 1 year.	
VII.	B bonds with maturities of more than 3 years.....	5
	B– bonds with maturities of more than 1 year.	
	C+ bonds with maturities of not more than 1 year.	
VIII.	C+ bonds with maturities of more than 1 year.....	0
	C bonds of all maturities.	
	C– bonds of all maturities.	
	D+ bonds of all maturities.	
	D bonds of all maturities.	
	D– bonds of all maturities.	
IX.	Defaulted bonds	0
X.	Unrated bonds	0
XI.	Bonds not listed (meaning unmarketable)	0

* Rating symbols have been converted to those used in the present study.

Broadly considered, desirability weightings are intended to convey the relative excellence of bond portfolios with reference to the probable absence of defaults in the payment of interest and principal, of defaults in other requirements of the obligation, and with reference also to the likelihood of a sustained market value under pressure.

Even the qualified acceptance of the efficacy of the desirability weighting system as a theoretically sound means of measuring the total desirability of banks' bond portfolios assumes a proper assignment of weights. It has already been pointed out that Osterhus' stated opinion that any chain of numbers would be satisfactory is not tenable, and this fact in itself leaves the weighting question open to inquiry.

Indeed, since the inauguration of this method of appraisal in the Federal Reserve System, a new scale of weights has been considered, this new scale involving the classification in Table 47.[8]

Bond Maturities.—There are two major features of this possible assignment of weights: first, the introduction of the factor of maturity, and second, the weights assigned to each class. As a matter of fact, Osterhus had been interested in maturities when he announced the desirability weighting system in 1931, but at that time he considered maturities separately. The significance of maturities, so far as banks are concerned, is found in the proposition that their tabulation

> will show whether any definite policy has been followed with respect to rotation and whether the short-term issues held are of sufficiently high grade to include them in the secondary reserve. The secondary reserve must only include issues that can be converted into cash reserves at short notice without loss.[9]

Now, however, the maturity factor is considered of sufficient importance to be included in the estimate of quality. Thus, according to the scale involving maturities, an A– bond with a maturity not more distant than three years is considered equally as desirable for bank investment as an A+ bond with a maturity of more thon twelve years; a B- bond with a maturity of not more than one year is regarded equal to a B+ bond with a maturity of more than five years; and so on, as indicated in Table 47. In general, three ratings are included in each class, this being, presumably, an arbitrary selection, as is the decision as to the limits of the maturities in each class. Thus relatively near maturity is given a position

[8] Memorandum from Gustav Osterhus to the present writer, dated May 3, 1932.
[9] Gustav Osterhus, *op. cit.*, p. 111.

equivalent to two ratings higher in what is generally called investment quality, the intrinsic worth of the bond. It is also characteristic of this new scale that as the ratings proceed downward by classes, shorter maturities are required. That is, A+ bonds in the highest class are allowed longer maturities than A– bonds in the highest class. The highest-classified A bonds are limited to four years, the highest classified A– bonds to three years, and so on. Further, it should be noted that the nearer maturities for given classes apply as the ratings proceed downward. In Class III for example, A+ bonds, are acceptable even when their maturities are over twelve years, while in Class IV the highest grade of bond (A) is acceptable in maturities of more than ten years, while in Class V the highest grade of bond (A–) is listed for maturities of more than seven years. In other words, according to the Osterhus theory, nearer maturities are desirable as the ratings proceed step by step lower.

The principal assumption of Osterhus' desirability-maturity theory is that bonds tend to deteriorate with age, that the longer an issue has of remaining life, the greater are its chances of casualty. Likened to physical life, there are more chances that a man with a long expectancy of life will sometime suffer an accident than there are that an older man will meet with mishap. Otherwise stated, one basis of the desirability-maturity theory is that, within the limits defined in Table 47, lower-rated bonds with shorter maturities are as desirable for bank investment as are higher-rated bonds of longer maturities.

It is clear that this mechanism assumes the pessimistically *possible,* which is, of course, the proper point of view for bank portfolios. The assumption is, in other words, the adoption of pessimistic possibility rather than probability. According to the probability point of view, A+ bonds of *any* maturity are superior to A– bonds of any maturity. According to the possibility standard, some A+ bonds are no more desirable as bank investments than some A– bonds. And the line of demarcation, according to the Osterhus theory, is maturity—the longer the maturity, the less desirable the bond. With this

assumption it is possible to quarrel, for it is generally recognized that although in times of "fair weather" short maturities, other things being equal, lend strength, the reverse is generally true in periods of economic stress. Experience has taught that banks should regard their investments from the disaster point of view. Consequently, unless the Federal Reserve adopts a different viewpoint or considers the portfolios under its supervision very long-term commitments not subject to revision, there appears to be a doubtful basis for the adoption of short maturities as the equivalents of higher intrinsic merit during periods of financial difficulty. The plan of assigning equal desirability to short-term obligations two ratings lower than other obligations is based upon grounds which may be theoretically sound as a long-term inflexible rule, but bank investments are not ordinarily made for exceptionally long terms, nor are they intended to be inflexible. It is true, however, that banks have a special interest in liquidity which, it may be contended, is facilitated by early maturity, assuming the bond to be sound; and it is furthermore true that short-term bonds are less affected by changes in money rates.

If, on the other hand, the introduction of maturity into the matter of desirability is well founded, and if desirability for bank investment is comparable to desirability for investment by others who share the bank's attitude of skepticism, which is not necessarily the case, then probably the rating agencies should consider the inauguration of a "new deal" whereby maturity would automatically enter into the assignment of ratings in the first place, and thus reduce the labor of reclassification on the part of all followers of the system.

Experiment with five hypothetical portfolios, chosen strictly at random from 363 issues used for testing in this study, has led to the discovery that there is an uncomfortable closeness between the indices of quality of different portfolios. This was due to the fact that the desirability weights assigned were too close together to allow any reasonable basis for discrimination. It is the proposal of this investigator, therefore, that wider gaps in the weights be adopted with a view to facilitating comparison as between portfolios. What these weights

should be must remain an arbitrary matter, since no truly scientific means are available for such assignment.

According to the schedule submitted by Osterhus in his "Flaw Tester" announcement, as shown in Table 46, there is no difference in the desirability of A+ and A bonds for bank investment. There is then a decline of 10% in the desirability of A– bonds, another 10% in B+ bonds, a further 30% in B issues, and an additional 40% in B– obligations. Study of the market action record described in Chapter 7 and the default record, as shown in Chapter 9, fails to lend much support to Osterhus' weightings. In the light of these market and default records, the present writer is led to suggest the following weight assignments, which are more in keeping with the developments of a disastrous period—a period against which the desirability weighting system seeks to fortify.

TABLE 48. SUGGESTED WEIGHTS OF DESIRABILITY BY RATINGS

Rating	Weight	Rating	Weight
A+	100	C+	10
A	90	C and lower	0
A—	75	Unrated	10
B+	60	Defaulted	0
B	45	Unmarketable	0
B—	30		

It is obvious that these weightings agree with those of Osterhus in the A+, C and lower, defaulted, and unmarketable groups. Except in the unrated group, the differences in the other ratings are based upon market history during the depression. The suggested assignment of a desirability weight of 10 to unrated issues is based, in part, upon the fact that bonds not rated by the rating agencies performed about as well during the depression as most other bonds rated B to B+ (these being assigned weights of 45 and 60 in Table 48) and, in part, upon the recognition of the fact that the assignment of weightings equivalent to those received by rated issues of like record in past would be both dangerous and without sufficient foundation. It is reasonable to contend, however, that since unrated bonds have maintained records equivalent to B and

B+ bonds, it would be incorrect to assign to them the same weight (zero) as to bonds in the lowest brackets. According to the schedule of weights suggested in Table 48, unrated bonds would be accorded no higher desirability rating than C+ issues.

It is not to be understood, however, that the use of these weights will or should turn in a record of perfection in the estimation of the relative strength of banks' bond portfolios. Such a belief would be altogether baseless, since it would have to be founded, in the main, upon two assumptions: (1) that history has already provided us with the necessary criteria, and (2) that the ratings in all cases have been properly assigned by the rating agencies. And it is clear that neither of these assumptions can be defended.

It is evident, of course, that the weights suggested in Table 48 are based upon the ratings assigned by rating agencies, the plan used (except in the specific weights actually assigned) in Osterhus' formal announcement of the system. If, however, the maturity factor is to be injected into the system (a procedure which is not acceptable to the present writer), some other series of weights would need to be adapted to that particular distribution.

CHAPTER 12

RATING CHANGES

The discussion of this chapter is concerned with changes in the ratings of securities: why they occur, what they mean to the bondholder, and whether they affect the market.

Of course, it is no secret that changes are sometimes made in the ratings. One agency is careful to warn investors that "Very often a bond issue of the B class, in the course of time rises to a higher plane, but almost as frequently it turns out poorly and slips to a still lower grade." [1] And, according to the same rating agency, ". . . in the vast majority of cases it will be found that changes in bond ratings are relatively slight and that only on rare occasions do bonds (outside of the semi-speculative classes) fluctuate in investment quality more than a point or two." [2] By "a point or two" the rating agency obviously means a rating or two.

Why the Ratings Are Changed.—That "Changing conditions cause changes in the quality of securities . . . ," especially bonds, is in the nature of an apology and deserves some notice. It is a moot question whether the *inherent* quality of a bond can be changed. Certainly the prospect for the enterprise may change, perhaps even the outlook for the industry in which the company is engaged. No question is raised as to these possibilities. But, are these factors not considered in the choice of a rating from the start? That is a question raised by critics of the rating system.

Such a question rests upon the postulate that there is such a thing as inherent quality in a bond, a proposition which it would probably be difficult to support. Rating agencies, however, in some of their explanations of the rating system, unwisely and perhaps unwittingly encourage such a point of view

[1] Moody's *Manual of Industrials*, 1931, p. ix.
[2] *Ibid.*, p. vii.

on the part of those who lean to this inherent-quality idea. The arguments stated in the several paragraphs following are based upon the inherent-quality assumption.

The whole system of rating bonds acknowledges overtly and implicitly that the long- as well as short-term outlook for the industry, for the company, and for the bond have been considered. One rating agency is very explicit on this point when it assures the investor that before assigning a rating, note is made of the extent to which the industry and the company are "subject to fluctuating business conditions, increasing competition, or change in industrial process or public taste." [3]

It is undoubtedly true that these factors were considered at the time of rating, but the point is that they were not accurately appraised and, of course, cannot be expected to be.

The point at issue is that rating agencies dodge the question when they apologize for rating changes on the ground that altered conditions cause changes in investment quality. Such a statement is an approach to the truth, but it is not the whole truth. A more accurate statement would be that the curtain of fog between the time of rating and the future has been lifted or has diminished in intensity, and that the rating agency is now able to see ahead more clearly. In *practice,* of course, this may amount to almost the same thing.

The agencies' claim to far-sightedness rests upon hollow ground. At any time changes may occur which were unpredictable by the rating agencies (or by anyone else) when the ratings were originally announced. These changes, or their potentiality, were factors to be considered at the time of rating, and according to the agencies, were so considered. Consequently, the only basis on which rating changes can really be justified is the admission that new conditions have revealed possibilities, indeed probabilities, which were not discernible to the agencies at the time of rating. Such eventualities, however, were inherent in the bond when it was issued.

No claim is made that perfect long-range prediction is possible or that changes in ratings should not take place. The point is that the explanation of changing conditions commonly

[3] The *Fitch Bond Book,* 1931, first unnumbered page following Foreword.

given by rating agencies is not adequate. The real reason is the lack of alleged perfection on the part of the raters. Changes in ratings from time to time are necessary because those originally assigned were wrong. Indeed, it would be remarkable if it turned out otherwise.

However, if investment purports to be anything more than short-term commitment, the claim that "Changing conditions cause changes in quality of securities" does not hold water. Altered conditions do not cause changes in long-term quality; they cause changes in the estimate of that quality.

Some light may be thrown upon this matter of causation in rating changes by some of the facts revealed in the statistical results of the present study. In the case of A+ bonds, for example, it was discovered that of the 147 bonds rated A+ by Fitch in July, 1929, only 46 were assigned the same rating in July, 1932. The remaining 101 bonds were distributed by ratings as follows: 23 A, 21 A–, 21 B+, 13 B, 15 B–, four C+, three C–, and one unrated. Let it be emphasized that these 1932 A+ to C– bonds were all rated A+ in 1929. How changing conditions can, in a short space of three years, cause declines in rating from A+ to C– (eight rating steps), or from bonds which were "suitable for investment by trustees and fiduciary institutions and liable to but slight market fluctuation other than through changes in the money rate" [4] to bonds which are "in actual or immediately anticipated default, with the chances of bondholders in future adjustments extremely slender," [5] is difficult to understand. One thing is clear, however, that the necessity for such drastic changes, even in the despair levels of 1932, illustrates the weakness of the alleged reason for rating changes. The rating of St. Louis-San Francisco 5s-1950 was not changed from A+ to C– primarily because of altered conditions but rather because the A+ rating was improperly assigned in 1929. This argument is made with the full realization that no rating agency could be expected at any time, much less in 1932, to turn in a perfect batting average.

[4] *Ibid.*, second unnumbered page following Foreword.
[5] *Ibid.*, third unnumbered page following Foreword.

The other point of view with reference to the reason for changing the ratings is that ratings are in the first place merely pronouncements of opinion based upon the more or less incomplete information available to the rating agency and upon the recognition that nothing is permanent in the world of investment. On this basis the arguments stated in the foregoing paragraphs do not fully apply. Rating executives point to this understanding when changes are made, and the agencies even provide for it in some of their explanations of the system. Nevertheless, they offset this protection to some extent when they assert that their ratings do not rest upon opinion or make other statements of similar effect.

The Investor's Dilemma.—The practice of changing the ratings, however, raises a practical problem for John Investor, who purchased Jingle Bell 4s-1945, say a year ago. The bond was rated A+ by John Investor's favorite financial service. He is sure of that, for he looked it up and intended to keep this bond for a long time, perhaps to leave it to his heirs. As stated by one "popular" writer,

> A bond . . . is one of [an investor's] personal belongings—something that he proposes to keep permanently. . . . He has gone to what seems to him like enormous trouble in purchasing his bond. He has looked it up in several financial reference books in order to find out how it is rated—whether as an AAA bond or an AA, or just a plain A.[6]

This rather naïve statement should not be taken too seriously as the customary practice. Nevertheless, it is representative of some types of investors, and some of them are larger investors than is generally thought. Except for coupon clipping, this bond of John Investor's has been in the darkness of the safety deposit box ever since its purchase. Last week, however, the rating agency announced that, along with a number of other changes, the rating on Jingle Bell 4s-1945 had been changed from A+ to A.

In this connection the question arises whether John Investor noticed the announcement of the change. Many investors

[6] Kenneth Roberts, "The Confessions of a Small Investor" in the *Saturday Evening Post*, Vol. 205, No. 39 (March 25, 1933), p. 69.

keep in constant touch with such notices; others do not. Meader appears to be of the opinion that the ratings should be consulted at least once a year,[7] a point of view which seems to agree, by implication, with the attitude of at least one rating agency. A recent addition to *Poor's Ratings,* entitled "List of Bonds Rated [B–, B, and B+]" is composed of "Bonds on the border line between the Investment grade and the Very Speculative, which should be watched" [8]—implying thereby that bonds rated above B+ need not be watched, or, at least only occasionally.

However, if John Investor has not been so busy attending the details of his shoe factory that he has failed to notice the announcement of the change, then he is made aware of the fact that he now holds not an A+ bond but an A bond. If this fact has made any impression upon him, he is confronted with the problem of what to do about it.

As things stand, John Investor may take one of three courses: (1) he may decide that he will stand by "his" original judgment and keep the bond; (2) he may choose to be watchful of events having a bearing on the welfare of his investment and decide later what action to take; (3) he may decide that since his investment is now only of A standing he had better rid himself of it and place his funds where they will be better protected. Which of these courses he will take will depend on his philosophy of life, on how important this bond is to his total fund, on his courage, on whether he would be taking a profit or a loss in the transaction, and on many other points of similar character.

Two Theories Involved.—What John Investor *should* do, of course, cannot be answered simply. If he is guided by popular notions about cause and effect, he should sell immediately. As expressed by an active banking authority, "market prices are frequently affected by changes in rating." [9] The implication is, of course, that a change in rating upward would

[7] J. W. Meader, "Diversification: A Sound Principle Often Carried to Unwarranted Extremes," in the *Annalist,* Vol. 44, No. 1125 (August 10, 1934) p. 196.
[8] *Poor's Corporation Ratings,* 2nd ed., 1934, p. 481.
[9] Gustav Osterhus, "Flaw-Tester for Bond Lists," in the *American Bankers Association Journal,* Vol. XXIV, No. 2 (August 1931), p. 67.

be reflected shortly thereafter by, and indeed would cause a rise in, the market price of the bond, that a change in rating downward would be followed by, and would bring about, a decline in the market on the bond. No evidence of this theory is offered by Osterhus, but it is clear that such an hypothesis has some basis in fact. Apparently this is, in part, what Preston has in mind when he remarks that

> The bond selling in the 60's today may win the favor of the great statistical agencies tomorrow and be promoted into the 90's as was its brother yesterday. But it will not be any the better security for the change, and in fact, because of the higher price demanded, will actually and mathematically offer only two thirds as much security for the funds to be invested. The countless inhibitions that straight-jacket the actions of trustees generally will prevent widespread recognition of this single fact except theoretically.[10]

It is obvious that the two implications of Preston's remarks are that a change in rating upward will affect market value upward and that trustees will not purchase the bond until the rating has been raised to an acceptable rank. If it is true that a change in rating is followed by a change in market price in the same direction, whether causation is involved or not, then of course, it behooves John Investor to sell his Jingle Bell 4s-1945. But if the theory that market change follows rating change is based solely upon inference, then John Investor is really taking chances with his investment.

It should be borne in mind that two theories are involved in the propositions informally sponsored by Osterhus, Preston, and others: the theory of sequence and the theory of causation. In view of the importance of the validity of these theories or lack of it, it is essential to look into them with considerable care.

Statistical Findings.—An investigation was made of rating changes and market prices, using the full portfolio of the 363 issues involved in the present study. Every one of the 363 bonds was checked for every change in rating throughout the entire six-year period of the study. This was done for two

[10] Jerome Preston, "Prospects for Utilities," in *Barron's*, Vol. XIV, No. 42 (October 15, 1934), p. 11.

rating agencies (Fitch and Moody), and the time of each specific change was noted.

Number and Nature of Changes.—In this connection it has already been shown [11] that Fitch appeared to be more optimistic than any of the other agencies, as measured by the distribution of bond issues, by specific ratings. And, as might be expected, Fitch was also the least constant in the matter of rating changes, having recorded a much greater number of changes than Moody. Fitch, in fact, allowed only 42 of its 1929 judgments (of issues included in the testing portfolio) to stand unchanged throughout the six-year period, while Moody held its ground on 82. The distribution is shown in Table 49.

TABLE 49. CASES IN WHICH NO CHANGES IN RATINGS ON 363 BONDS OCCURRED, JULY 15, 1929 TO JULY 15, 1935

FITCH			MOODY		
Rating	Number of Issues	Rating Distribution of Issues Common to Both Lists	Rating	Number of Issues	Rating Distribution of Issues Common to Both Lists
A+	38	31	A+	38	31
A	1	1	A	13	1
A—	1	1	A—	13	2
B+	0	0	B+	7	0
B	1	1	B	2	1
No Rating .	1	1	No rating .	9	.0
Total ...	42	35	Total ...	82	35

The most significant feature of this table is that the retention of the same rating throughout the entire six-year period occurred, in the Fitch agency, almost exclusively in the A+ issues, and, in the Moody agency, predominately in the A+ rating. What this means is apparently that rating agencies, as measured by their own confirmation or negation of their earlier judgments, are more successful in estimating the rela-

[11] *Supra*, Chapter 6.

tive investment merit of the highest grade bonds, such as Brooklyn Edison 5s-1949.

It is also significant that, as shown in Table 49, of the 35 issues common to both lists, all but one were given the same rating by both agencies.[12] From this fact, one may conclude that agreement as to ratings is generally a factor not only of strength of the bond itself but also of stability of rating in the future.

As might perhaps be expected, those industries subject to government regulation predominated in the groups in which the two agencies did not find it necessary to change their original appraisal. Of the 42 bonds on which Fitch recorded no change in rating during the six-year period, 27 issues or 64.3% were public utility issues of both holding and operating companies.[13]

With the exception of one issue (Nassau Electric), these public utility issues were of such high quality that even a novice might be expected to recognize their investment merit without ready-made guidance. Eleven railroad bonds, or 26.2% of the list on which no changes in rating were made, were likewise conspicuously investment issues.[14]

As for industrial issues, those in which genuine, disinterested analysis might be most useful to the layman, Fitch adhered to the July, 1929 rating throughout in only four instances: Framerican Industrial Development 7½s-1942 (no rating), Illinois Steel 4½s-1941 (rated A+), and Liggett & Myers Tobacco 7s-1944 and 5s-1951 (both rated A+). Since "no rating" is assigned when there are, in the opinion of rating executives, insufficient data upon which to base any other appraisal, the attachment of this label continuously to Framerican Industrial Development 7½s-1942 was a caution signal

[12] The exception, Framerican Industrial Development 7½s-1942, was throughout the period given no rating by Fitch, while Moody rated the issue A–.

[13] The holding companies were American Telephone & Telegraph, Appalachian Electric Power, and Pacific Telephone & Telegraph. The operating company issues included such outstanding bonds as those of Bell Telephone of Pennsylvania and other telephone companies, Boston Consolidated Gas, Brooklyn Edison, Brooklyn Union Gas, and New York Edison. Only the Nassau Electric Railroad (traction) 4s-1951 were out of the investment class with a rating of B by both Fitch and Moody throughout the period of this study.

[14] Atchison, Topeka & Santa Fe general 4s-1995, Chesapeake & Ohio 4½s-1992, three Chicago, Burlington & Quincy issues, and the very strong Chicago Union Station bonds.

based upon external factors rather than an internal appraisal. It is not really a rating. Hence, Fitch made firm recommendations on only three industrial issues, although the intrinsic values of industrial issues are the most difficult for the average investor to forecast.

The record of Moody was similar, though the group in which no changes were recorded was twice as numerous. Moody held to original investment ratings with respect to 41 public utility bonds representing 50.0% of the "no change" group: 24 railroad issues (29.3%); 10 industrials (12.2%); and 7 investment and real estate issues (8.5%). But Moody, unlike Fitch, took a consistent position on a number of second-rate issues, including public utilities, railroads, and industrials. Moody rated two bonds B throughout the entire period: Nassau Electric Railroad 4s-1951 (similarly rated by Fitch), and Dold Packing Company 6s-1942. Two railroad bonds were rated B– throughout the period: Boston & Maine 5s–1957 and Erie general lien 4s-1996; likewise, three public utilities—the Brooklyn-Manhattan Transit 6s-1968, Southern Colorado Power 6s-1947, and Iowa-Nebraska Light and Power 5s-1957; and two industrials, Pillsbury Flour Mills 6s-1943 and Wilson & Company 6s-1941.

Again, whereas Fitch hung out but one caution signal (the "no rating" of Framerican Industrial Development 7½s-1942), Moody consistently refused any rating to nine issues, namely:

American Express	4s–1948
General American Investors	5s–1952
International Securities of America	5s–1947
Investment Company of America	5s–1947
Pacific Investing	5s–1948
Park & Lexington	6½s–1953
Stevens Hotel	6s–1945
B. F. Keith	6s–1946
E. W. Scripps	5½s–1943

With the exception of the Scripps issue, all of these bonds are real estate or investment obligations.

But the no-change group is, after all, only of passing interest. More important is the question, What was the common

practice with reference to the number of changes in rating during this period? Such data are brought out in Table 50.

TABLE 50. NUMBER OF CHANGES IN RATING IN 363 BONDS, JULY 15, 1929 TO JULY 15, 1935

FITCH			MOODY		
Number of Changes	Number of Issues	Cumulative Number of Issues	Number of Changes	Number of Issues	Cumulative Number of Issues
No change..	42	42	No change..	82	82
One	38	80	One	94	176
Two	54	134	Two	81	257
Three	58	192	Three	71	328
Four	57	249	Four	26	354
Five	37	286	Five	8	362
Six	51	337	Six	1	363
Seven	22	359	Seven	0	
Eight	4	363	Eight	0	
Total	363		Total	363	

These figures show clearly that the Fitch agency was far less constant in its ratings than was Moody. While Moody included a total of 176 issues in the no-change and the one-change group, Fitch's record involved only 80 such issues. In like manner Moody's record included 328 of the 363 issues in from no-change to three changes, while Fitch's comprised only 192 issues down to that point. This means that a larger number of Fitch issues must have found their way into the rating-change record in the lower end of the scale.

Fitch shows eight changes in rating in each of four issues. When such changes occur during a period limited to six years it casts considerable doubt upon the rating process. It should be of interest, therefore, to ascertain which four issues were involved. Search of the records produces the fact that two were rails and two were industrials. These were:

Company	Issue	Fitch 1929 Rating
Bush Terminal Co.	5s–1955	A
Missouri-Kansas-Texas	5s–1962	A+
Missouri-Kansas Texas	4s–1962	A+
Otis Steel	6s–1941	A–

Ordinarily, it would be supposed that changes in industrial issues would be more frequent than in rails, for the rails are more predictable as to earnings and other criteria of value. This is probably true, and it must be borne in mind that, as already shown,[15] the testing portfolio contains a much larger proportion of rails and utilities than of industrials. Likewise, it would be supposed that more likelihood exists for such frequent changes in low- or medium-rated bonds than in the high ratings, but as shown in the list above, none of these four issues carried 1929 ratings below A–, and two of them enjoyed A+ prestige. It is significant that in every one of these four issues Fitch assigned a higher 1929 rating than any other agency, Poor and Standard included. In the two industrial issues, the 1929 ratings by all three of the other agencies were one step lower than those assigned by Fitch, and in the two railroad obligations the 1929 ratings by all three of the other agencies were *two* steps lower than those assigned by Fitch, a fact which, on the basis of "pessimistic ratings," would have been called to the attention of the inquiring investor. It is of interest also that both of the industrial issues were in technical or actual default during part of the six-year period involved.

The fact that even the Moody agency, which asserts that its system has been perfected, has had to change its ratings as often as it did during this six-year period is not a point to which it would "point with pride." The point of view of rating executives appears to be that constant ratings are a badge of success, a monument of the foresightedness, the long-range judgment of the raters. The rating agencies make changes in ratings only when such changes are almost imperative if not fully so. It is true that the rating agencies do not hold their judgments forth as final and immutable proclamations of investment merit, but they take pride in having their judgments (which are, in part, forecasts) verified by time. There were, of course, some almost incredible circumstances in the period under discussion—a fact which tends to mitigate the conclusion that the record in the rating agency was so

[15] *Supra*, Chapter 6.

lacking in marksmanship. (It should be recalled, however, that the Moody record in this respect was not without its peer in the lack of perfection). Of Moody's 94 issues in which only one rating change was made, by far the greater number were changes within the A+, A, and A– groups, all considered strictly investment classifications. Not all of these shifts, however, were downward. Some ratings were revised upward, and four issues changed from A– to "no rating," indicating that the data upon which to base a judgment were no longer available.

It would bore the reader to enumerate the details of the voluminous statistical data of this section of the study. Enough has been said to show the relative instability of rating judgments of two representative agencies. That uncertainty should exist as to the investment merit of established issues in so many cases shows how baseless is any assumption of rating perfection in a dynamic society. Apart from all questions of cyclical changes in business and in general purchasing power, there are so many factors constantly influencing security values that successful forecasting is extremely difficult, and certainly is impossible to obtain even at a price. The utilities and rails, which are particularly subject to regulation, might be considered relatively less hazardous to judge than industries, yet the unpredictable political factor in these fields injects an element of uncertainty into judgments based on purely economic grounds. The political factors, for example, together with the cyclical character of the industrial market for electric power, have, during the period of this study, largely offset the upward trend of the industry. Of course, rating executives contend that political factors are considered in arriving at the ratings, but such factors are almost impossible to appraise with any significant degree of accuracy.

Effect of Changes upon Market.—If there is any effect of rating changes upon the market, it should be revealed in price quotations. To test for this relationship, a study was made of every rating change announced or shown by Fitch for the entire portfolio of 363 bonds from mid-July 1929 to mid-

July 1931. In addition, weekly price quotations were taken for a period of six weeks before and six weeks after each rating change. The Fitch ratings were used in this section of the study because of the ease of obtaining the data required. The purpose of this test was to observe the degree of relationship between the rating changes and the bond price movements prior to and after the announcement of the changes: whether, for example, a one-step downward rating change was followed or was preceded by a downward movement in price, whether a two-step rating change had a similar effect or possibly a greater effect, etc.

Thousands of observations were made in this attempt to discover some material correspondence between price change and rating change. As might be expected, every conceivable combination of price- and rating-change relationship was discovered, but none of a consistent nature, so that significant conclusions as to a relationship of this nature could not be drawn from the results.

One type of price sequence is found, for example, in the case of Postal Telegraph & Cable 5s–1953, changed from A– to B– on November 18, 1930. In this instance the bond was selling at 81 six weeks prior to the change in rating. Excepting the next week, the market value fell consistently (81½, 80¼, 79, 77⅞, 71) to the point of the rating change, then dropped considerably to 62½, 65, 64, 57, 53¼, and was at 57 six weeks after the change. In other words, the market action was one of a decline in value both preceding and following the change in rating. Many of the cases in these observations as to rating change and market action were of this type. This is not to state, however, that there were not many instances of other types of action. In connection with this type of action, but in the opposite direction, the *Wall Street Journal* remarks that

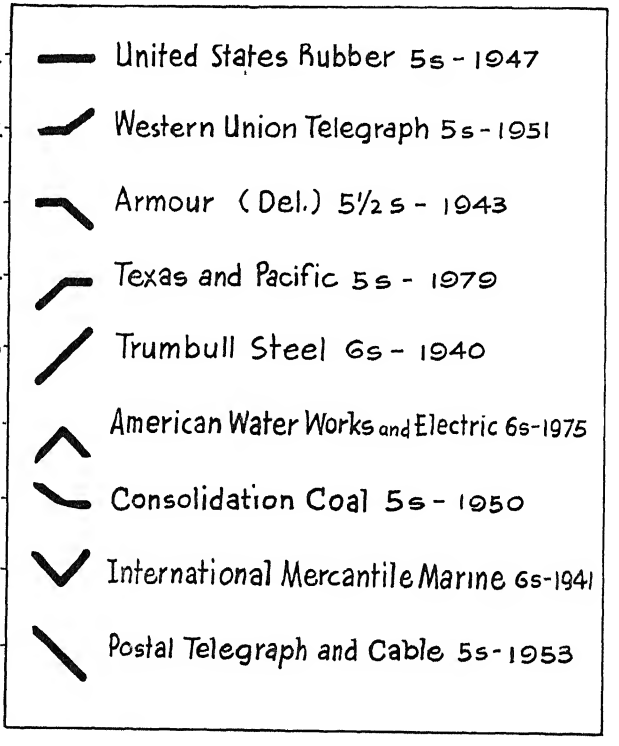
> When an issue appreciates substantially, and nears par, as some railroad obligations have in recent months in reflection of improved earning power, a higher rating is given at a time when such earnings may have been well discounted.[16]

[16] *Wall Street Journal*, Vol. CVII, No. 60 (March 13, 1936), p. 1, col. 6.

Not identical with the above statement but closely related to it is the assertion of Bushnell, who remarks that

> Since conditions are constantly changing, individual issues within a group will be improving, or the reverse. In time, this change will be reflected in ratings . . . but *after* the change has taken place.[17]

CHART 4. EXAMPLES OF NINE TYPES OF MARKET ACTION OF BONDS SIX WEEKS BEFORE AND SIX WEEKS AFTER RATING CHANGE DOWNWARD



Possibly what Bushnell has in mind may be found in the case of the Consolidation Coal 5s-1950, exemplified in Type (7) below. In the latter instance, the issue declined in value prior to the rating change downward and remained on a more or less even keel after the change. Bushnell's description of

[17] George D. Bushnell, "Investments Join Loans," in the *Rand McNally Bankers Monthly*, Vol. 53, No. 6 (June, 1936), p. 368.

what takes place seems to fit into this picture better than into any of the others, since he says nothing as to what happens marketwise after the change, implying perhaps that nothing unusual occurs.

Many other types of market action are found, however, in the statistical data of this section of the study. The discovered sequences may be summarized in nine general types, as follows: that preceding and following a change in rating, the market price of a bond may, respectively,

1. Remain constant and continue so.
2. Remain constant and rise.
3. Remain constant and decline.
4. Rise and remain constant.
5. Rise and continue rising.
6. Rise and decline.
7. Decline and remain constant.
8. Decline and rise.
9. Decline and continue declining.

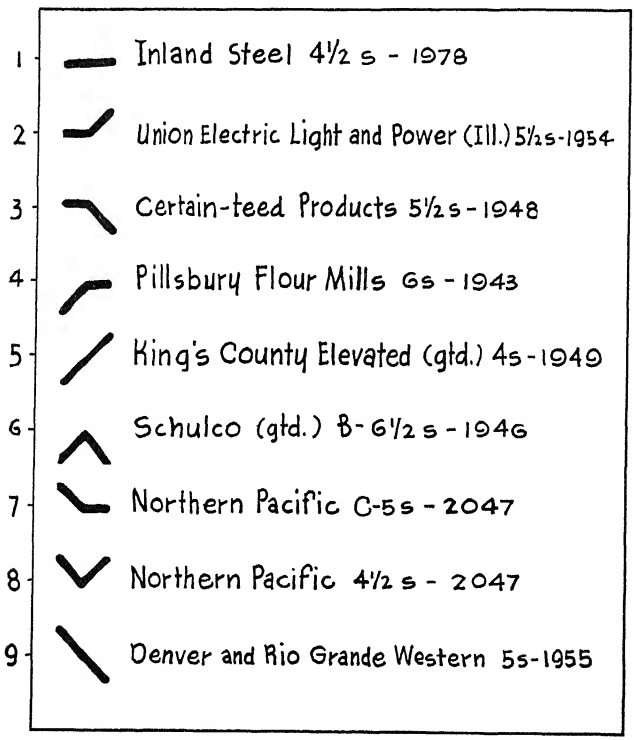
Each of these general types is illustrated in simplified fashion (omitting *detailed* price changes) in Chart 4. The supporting data, including exact prices, dates, etc., are to be found in Appendix D. In all the cases shown, the rating change was downward.

It is not, however, with downward changes alone that these general types of market action are identified. The same general varieties are likewise to be found in the history of rating changes upward. Each of these nine general types of price sequence, applied to rating-up cases, is illustrated similarly in Chart 5. The supporting data likewise are to be found in Appendix D.

It is found, therefore, that not nine but eighteen types of market action apply to rating changes: nine patterns in downward changes and the same nine patterns in upward changes. Eighteen available general observations, therefore, must be included in any study designed to answer the question of market action which occurs preceding and following a change in rating.

It is clear that the existence of eighteen types of market action in a portfolio limited to 363 bonds leads the study into statistical difficulties not to be waived. As a matter of fact, when the no-rating-change issues are removed, the testing port-

CHART 5. EXAMPLES OF NINE TYPES OF MARKET ACTION OF BONDS SIX WEEKS BEFORE AND SIX WEEKS AFTER RATING CHANGE UPWARD



folio for this section of the study consists of only 321 issues (using Fitch ratings) or 281 issues (using Moody ratings).

Still another consideration is involved in these tests. It is not sufficient, for example, to show that the market action of a bond was downward before a downward rating change and downward after the change, for it may have been that the whole market was declining at the same time or during part

of the time. In the case of a rating change upward, the particular bond may have moved down in price both before and after the change, but the market in general for similar issues may have moved, let us say, downward before the change, upward after the change. Eight other possibilities in the market for similar issues may have applied to this one case of a particular bond. Thus any one of nine possible general types of market action may be found in the market co-existent with the record of a particular bond. Consequently, there are 81 possible observations to be found in a study of rating changes downward and 81 in rating changes upward. With a total of 162 results (general, not detailed types) from a portfolio limited to 321 or 281 testable bonds, it is clear that no valid conclusions can be drawn with such a small sample.

Conclusions.—A stand often taken by rating executives is that "Ratings are changed only when some irreparable damage or some permanent improvement has taken place in the position of the bonds from a long-term investment point of view." The findings of this study question the validity of the "irreparable damage" and "permanent improvement" phase of this statement on the ground that the number and frequency of rating changes belie the irreparability and the permanence of any situation and that they certainly cast considerable doubt upon the thought that there is any true "long-term investment point of view." Since ratings are changed so frequently the rating agencies would do better, from the viewpoint of sound reasoning (though possibly not commercially), to delete the claim of permanence and their emphasis upon the long-term point of view.

Another theory with reference to rating changes is that not only do such changes precede market action in the same direction but that they cause it. This matter of causation is based in part upon the assumption that

Everything that happens, and everything that exists, necessarily happens or exists as a consequence of a previous state of things.[18]

[18] Arne Fisher, *The Mathematical Theory of Probabilities* (The Macmillan Co., New York: 1922), Vol. 1, p. 2.

Assuming that everything happens "as a consequence of a previous state of things," it is not impossible that a change in rating could cause a decline or rise, as the case may be, in the price of the bond in question. As stated by one investigator of business forecasting (a matter very closely related to bond rating),

> One of the problems of the business forecaster that is not encountered in such fields as the prediction of the weather or of human death-rates is the possible effect of the prediction itself upon the course of events with which the prediction is concerned.[19]

It is apparent, of course, that bond ratings are not intended to be forecasts in the same sense as that in which "business forecasting" is dealt with by Cox. Bond *advices*—advices to buy and sell specific bonds (what Standard calls "market ratings")—are more nearly so, and these advices likewise are closely related to bond ratings. In connection with bond advices the writer has shown elsewhere that

> . . . there is a very definite tendency for the market value of specifically recommended bonds to rise within ten days after publication of the "buy" advice, and, conversely, . . . there is a definite tendency for the market value of "sell" bonds to decline within the same immediate period.
>
> Whether this outcome is the result of expert forecasting or whether the forecasts influenced the market . . . has not been shown. Resort for the answer to this question of causation may be had, by inference, to the purpose of such forecasting. Examination of the specific advices reveals that in practically all cases the point of view taken was the short or medium term horizon. No attempt was made to advise for the immediate results. Consequently it may be held that the immediate results were not forecast but that the forecasts themselves probably induced the immediate results through the pressure placed upon the supply of and demand for the respective issues.[20]

It is understood, of course, that, as Cox has stated, the greater the attention that is given by followers of business [or financial] forecasting to those forecasts, the greater the effect upon the course of later events.[21]

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[19] Garfield V. Cox, *An Appraisal of American Business Forecasting* (University of Chicago Press, Chicago: 1929), p. 5.

[20] Gilbert Harold, "Accuracy in Reading the Investment Spectrum," in the *American Bankers Association Journal*, Vol. XXVII, No. 1 (July, 1934), p. 32.

[21] Garfield V Cox, "Forecasting Business," in the *Encyclopaedia of the Social Sciences* (The Macmillan Co., New York: 1931), Vol. 6, p. 352.

Although it is conceded that bond *advices* probably do have some effect upon the immediate market course of the bonds concerned, especially when such advices are issued by a forecasting agency whose predictions are widely read and accepted, it does not necessarily follow that a similar phenomenon will be found with reference to bond *ratings,* for, among other reasons, changes in bond ratings are not usually given the prominence enjoyed by bond advices.

Nevertheless, the theory that bond rating changes cause bond price changes is very widely held. Osterhus, for example, has accepted the proposition,[22] as have Preston[23] and Bushnell,[24] and many bankers and investment brokers have assumed the theory to be sound. As an investment counsellor, one of these, writing along these lines, remarks that

> . . . the difference in yield . . . , if both bonds are in the same group, might be due to potential increased rating. . . .[25]

And, in the same vein, a well-known investment brokerage firm mentions that

> It is understood to be a fact that when a rating is expected to be raised some of the dealers will purchase blocks of bonds in anticipation thereof, knowing that sales will be readily made at better prices thereafter.[26]

Even some of the rating executives confess to a belief in this theory: that bond rating changes cause bond price changes. It is obvious, of course, that if a rating executive believed in this proposition, and if it were true, then he would have ample opportunity for taking advantage of it, since rating executives necessarily know in advance what rating changes are to be announced.

It is a conclusion of this study, however, that there is no significant evidence to support this theory. The evidence fails to show *sufficient grounds* for the claim that bond prices generally *follow* rating changes in the direction of the changes;

[22] Gustav Osterhus, *op. cit.*
[23] Jerome Preston, *op. cit.*
[24] George D. Bushnell, *op. cit.*
[25] George D. Bushnell, investment counsellor, George D. Bushnell and Associates, Chicago, in a letter to the present writer, dated March 5, 1936.
[26] James H. Oliphant & Co., investment brokers, New York, in a letter to the present writer, dated February 27, 1936.

and there is much less basis for the belief that bond price movements are generally *caused* by such changes. That there may be some tendency in this direction is possible, but the investor who seeks safety cannot afford to invest in possible tendencies. The exceptions are so numerous and so violent that operations on such grounds are almost certain to prove hazardous and perhaps disastrous.

As to the hypothesis that when a change in rating is announced the investor should act marketwise in the direction of the rating change, certainly little support is found in the conclusions of this study. Many, indeed an extremely large number of, observations are available in the results of this investigation to afford strong support for the practice of selling on a rating change downward and of buying on a rating change upward. A large number of observations are available, however, to deny the wisdom of this procedure as a general proposition. And since there seem to be no other easily perceived criteria (such as nature of industry, position on the price scale, or position on the rating scale) to add to the rating change as a simple guide, the conclusion is that the investor must seek other less simple guides on the question whether he should make any move with respect to his bond portfolio.

It might appear on the surface that this conclusion is a peculiar bedfellow for that stated earlier,[27] i.e., that bonds tend to be valued in the market at approximately the same yield for all bonds of the same rating, but paradoxical as it may seem, these conclusions are not necessarily antithetical. It will be recalled that the findings in the matter of yields dealt with *averages*,[28] that it was pointed out that exceptional cases were not infrequent,[29] and that the market action of bonds of specific ratings, although fairly regular in terms of averages, contained so many exceptions that some doubt was cast upon their use for the individual investor.[30] If the investor could afford to deal in averages, he might rely fairly well upon the ratings, and even to some degree upon rating changes, as the

[27] *Supra*, Chapter 8.
[28] *Ibid.*
[29] *Ibid.*
[30] *Supra*, Chapter 7.

sole guides for his activities. Since, however, the individual investor does not deal in averages, and since he cannot afford to act as his own investment insurance company, the conclusion that the investor must find other means of determination is unavoidable.

CHAPTER 13

INVESTING IN YIELDS BY RATINGS

In Chapter 10 a method was discussed whereby the investor could use the rating system, from a protective point of view, to better advantage than the usual procedure involves. The recommendation was to adopt "pessimistic" ratings, and it was described as a means of attaining increased safety in times of declining bond prices. However, in the field of bond investment, some hold that since the ratings, on the whole, are properly assigned, one should attempt to obtain as much income as possible within given classes. Concerning this, the following fictitious conversation between a bond salesman and an individual bond buyer may be said to be fairly typical.

Salesman: Mr. Williams, we are offering you here a [B+] bond at a price to yield about nine per cent. Do you realize that's about two and a half per cent more than the yield on most other [B+] issues? Ordinarily, you know, you have to go clear down to a [B—] issue to get a yield like that.

Investor: Well, then how do you account for the fact that a [B+] issue is selling as low as that? What's the matter with it?

Salesman: Nothing at all, Mr. Williams, the bond is simply undervalued in the market. And I'd rather take the rating agency's word for the quality of the bond than the market's temporary estimate, wouldn't you? After all, the rating on the bond is a quality rating made by a disinterested party. The temporary market on it is just a jumble of many people's opinions. Very often we find cases like this, and when we do we consider the bond a purchase. It's a case of getting higher quality and higher yield all in one investment.

Conversations like this are familiar to many thousands of bond buyers throughout the United States. The bond investor is interested primarily in two things: quality and yield. The quality is allegedly described by the rating; the yield is easily computed. The investor, therefore, is not unnaturally

interested in the opportunity of combining superior quality and high yield in one commitment.

On the other hand, an expert bond trader points out that the experienced bond man pays very little attention to the rating. He is as well acquainted with the considerations involved in that bond as is the rating organization. And he is in constant touch with the latest information that is likely to affect the market on the bond. This may be true of professional bond traders, but it certainly does not hold for the legions of bond investors scattered all over the country. John Investor, of Poughkeepsie, is certainly not posted on the fifty-minutes-ago information issued by the XYZ Corporation, nor is he ordinarily informed on the week-old rumors having some possible effect upon every bond in which he is interested. Consequently, he is more interested in long-term quality than in temporary shifts. His position is quite different from that of the in-again, out-again bond trader. The former is ordinarily dependent on long-term quality—which is what bond ratings purport to represent.

Background.—The proposition that one should obtain as high a yield as is consistent with safety is neither new nor radical. This principle is stated by Lyon:

> As between two possible commitments which come to the investor's attention which in his opinion would involve equal risks he wants to make the one which brings him the greater income. He strives toward the goal of buying the greatest possible income out of all the securities of the entire class representing a given amount of risk.[1]

Chamberlain and Edwards likewise direct attention to this point:

> The greatest need of most people and institutions *which buy for pure investment* is the highest return compatible with good security.[2]

In adopting this point of view as to quality and yield, it remains for the investor to determine only the matter of quality, and since it has been repeatedly shown in preceding chapters that by and large the ratings assigned by the principal agencies

[1] Hastings Lyon, *Investment* (Houghton Mifflin Co., Boston: 1926), p. 531.
[2] Lawrence Chamberlain and George W. Edwards, *The Principles of Bond Investment* (Henry Holt & Co., Inc., New York: 1927), p. 72.

are almost universally accepted as indicators of investment quality, the simple application of ratings as proper symbols of such quality follows as a natural step in the bond-selection process. Since the rating agencies themselves, most rating users, and many independent authorities on investment agree with the assertion of the Twentieth Century Fund that "the standard of accuracy is unquestionably high," [3] there is good reason for testing the validity of such procedure.

Bargains in Bonds.—Investigation of this principle of investment—the principle that, as one of the rating officials has expressed it, "One should get the most in rating for one's money"—leads to some extremely interesting results. Suppose, for example, that the investor could obtain an A bond to yield 6.0% to maturity as against another A bond to yield 5.0%. Would it be good investment policy to exchange the latter for the former? According to rating officials, when a bond is selling conspicuously higher (yielding much less) than the average of its rating class, then, barring such unusual conditions as attractive convertibilities, "Either the bond should be rated higher or the bond is overpriced, and the chances are it is overpriced."

Confirmation of the theory that, in general, the investor should get the most in rating (for rating symbolizes quality) for his money is implied in the statement of the Twentieth Century Fund, which remarks that

> The ratings cannot be interpreted as advice to buy any given security because market prices are not taken into consideration in such rating.[4]

If it is true that market prices are not considered in quality ratings, it follows that such ratings symbolize the degree of investment quality alone. Does it not follow also that if the ratings are reasonably accurate measures of quality (and both the Twentieth Century Fund and the rating agencies agree that they are), the investor, unless he has some requirements peculiar to his particular needs, should obtain the most in in-

[3] Twentieth Century Fund, Inc., *Stock Market Control* (D. Appleton-Century Co., Inc., New York: 1934), p. 140.
[4] *Ibid.*

vestment quality for as little as he need put forth in his funds? Should he not, as Lyon suggests, obtain the greatest rate of return with a given amount of risk? Should he not, therefore, seek the greatest yield within a given rating? Such a conclusion, it is contended by the present writer, is unavoidable if bond ratings are accepted as authoritative symbols of investment merit or even as workable symbols indicating probable merit.

Investing in yields by ratings is quite generally practiced. Commercial banks frequently do so. The fact that bank examiners inspect the banks' books with reference to the bond account, not in terms of the obligor's earnings nor on the basis of analytical ratios, but as obligations of specific ratings,[5] encourages banks to seek the highest possible yield (exceptional cases excluded) while maintaining at the same time the quality of their portfolios as indicated by the ratings. A more or less typical instance of this desire of banks to obtain issues of apparently equal investment quality at higher yields is to be found in a switch recommended by the *American Banker* (a daily newspaper) suggesting the sale of Consumers Power 3¾s-1965 at 108½ and the purchase in their stead of Chicago Union Station 3¾s-1963 at 107.

> The rating on both issues is the same, while the Chicago Union Station bonds are selling a full point and a half below the other bonds. Primarily, this is due to their recent income, and it is expected that within a few weeks, the two bonds will close the spread and sell within a fraction of each other.[6]

Banks are not alone in trading on this basis, however. Countless investors are engaged in frequent exchanges in this manner. Indeed, rating agencies generally sponsor the plan in various publications and in advisory letters.

Related Practices.—Akin to the plan of accepting the highest yields within given ratings is that of going a step further and assuming the risk of ownership of bonds of still higher yields but lower ratings in an attempt to compensate for risk through the acquisition of higher income return. Some

[5] *Supra*, Chapter 3.
[6] *The American Banker*, Vol. CI, No. 54 (March 6, 1936), p. 2.

investors employ this plan with the thought that part of the higher return can be set aside as "insurance" against loss. The dangers of this practice are described by Graham and Dodd, who remark that

> Our arguments against the investor turning himself into an insurance company remain valid even if the insurance operations all told may prove profitable. The bond buyer is neither financially nor psychologically equipped to carry on extensive transactions involving the setting up of reserves out of regular income to absorb losses in substantial amounts suffered at irregular intervals.[7]

A similar practice is that of accepting the highest-yielding obligation of a given sound enterprise. The assumption in this case is that if the junior issues are not safe, the senior issues likewise are unsafe, that consequently, unless some extraneous factors are involved, the junior issues represent wiser commitments.[8] Applied to ratings, one may express the correlative principle as the theory of purchasing the highest-yielding obligations of a sound rating.

The practice of investing in yields by ratings is so widely employed by banks that one organization has made a business of simplifying the selection of issues to facilitate the banks' operations in this respect. Bondex, Inc., a Chicago financial service company, publishes monthly the *Bond Index,* containing principally a list of all active bonds on a "line-apiece" basis; that is, on one line are contained the name of the corporation, the issue, the "Bondex grading," market price, yield, price range, call price, legality for savings banks, the times-interest-earned ratio, and similar data. In all respects but two this plan of setting bond information before the investor is quite commonplace. The distinctive features of the Bondex tabulation lie in the "Bondex grading" and in the order in which issues are listed in the *Bond Index.* Starting with the highest grading (100), bonds are listed in the order of their supposed investment quality. Since the yield to maturity is given in all cases, the investor's selection of the highest yields within given gradings is facilitated.

[7] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. 88.

[8] For an exposition of this theory with discussion and illustration, see *Ibid.*, pp. 71-74.

Of course, in this scheme of listing—that is, by relative investment quality—the basis of calculation of that quality is important. Reference to the *Bond Index*' "Explanatory Notes" reveals the gradings have the following significance:

BONDEX GRADING. Quality expressed in percentage of the highest credit.
100 corresponds to a "triple A" rating—the highest investment quality.
90 corresponds to a "double A" rating—excellent investment quality.
80 corresponds to an "A" rating—good investment quality.
70 corresponds to a "triple B" rating—good margin of safety.
60 corresponds to a "double B" rating—fair quality.
50 corresponds to a "B" rating—speculative.
40 corresponds to a "triple C" rating—very speculative.
30 corresponds to a "double C" rating—in default or uncertain as to payment of interest or principal.
20 corresponds to a "C" rating—no investment merit—probable scaling down of principal.
The intermediate figures between these round numbers indicate intermediate gradations of quality.[9]

Queried as to how these gradings are arrived at, Bondex executives reply that they are obtained from an average of the quality ratings assigned by Fitch, Moody, Poor, and Standard, "plus the judgment of the Bondex research staff."

Thus, with bonds listed according to their alleged investment quality, it is easy for banks (the principal subscribers to the *Bond Index*) to select those issues affording relatively attractive yields. As shown above, this is indeed one of the principal considerations of banks (outside of the very large city banks) in arranging their portfolios. To a bank examiner, whether state or federal, a bond rated A and yielding 6% is as acceptable for banks' portfolios as a bond rated A and yielding 5%. This plan, then, lightens the burden of bank executives who, like Dice, feel, with respect to some of the bonds in their portfolios, that "The rating may be excellent, but the price may be too high relative to other . . . bonds of the same rating. . . ." [10]

[9] The *Bond Index*, any issue, first unnumbered page.
[10] Charles A. Dice, *The Stock Market* (McGraw-Hill Book Co., Inc., New York: 1926), p. 583.

Not only does the *Bond Index* seek to facilitate the selection of bonds with yields higher than others of the same grading, but Bondex executives go so far as to assert that in their listing of bonds of a given Bondex grading, within those of the *same* grading, the issue listed at the top is better than those listed under it, the one at the bottom (still, however, within the same grading) is the least desirable, and those listed between these extremities are desirable in the order in which they appear. Thus, of the four issues of Canadian Pacific collateral trust obligations, each having been assigned the same grading,[11] the 6s-1942 are preferable to the 4½s-1946, the 5s-1945, and the 4½s-1960 respectively. The collateral behind all of these issues are the perpetual 4s of the same company, but the 6s-1942 are backed by a relatively greater amount of such collateral than are the other issues. Nevertheless, in the opinion of the editors of the *Bond Index,* the same grading is assignable to all the issues in question, including the perpetual 4s. In further illustration of this practice of listing bonds according to the "Bondex grading," the accompanying Operating Railroad bonds are typical extracts.

OPERATING RAILROADS [12]

Issue	Rate	Maturity	Bondex Grading	Market	Yield
Mich. Central R. R.	1st 3½	5–1–52	96	106½	3.00
Great Northern Equip. Tr..	"B" 5	9–1–38	94	107¼	2.00
Canadian Pacific Equip. Tr.	"C" 4½	12–1–45	94	–	–
Lexington & Eastern Ry.....	1st 5	4–1–65	94	117½	4.00
Lehigh & New England ...	Gen. "A" 4	4–1–65	94	90⅞	3.88
Morris & Essex.....	1st & Ref. 3½	12–1–2000	94	90⅞	3.88
St. Joseph & Grand Island Ry.....	1st 4	1–1–47	92	107½	3.18

According to this list the Michigan Central 3½s-1952 are not only better bonds than the Great Northern Equipment Trust B-5s-1938, but also afford the investor a full 1% increase in yield—a very large difference considering the smallness of the yields involved. According to this excerpt, the Lexington & Eastern 5s-1965, yielding a full 2% more than

[11] The *Bond Index,* February, 1936, p. 5.
[12] The *Bond Index,* February, 1936, p. 3.

the Great Northern issue, or exactly twice as much, are equal to the latter issue in investment quality, or so nearly equal that the two issues are given exactly the same Bondex grading. According to Bondex executives, however, all of the issues given the grading "94" are related to each other in investment merit in the exact order in which they are listed. Thus the Lehigh & New England 4s-1965 are just a shade better in intrinsic merit than the Morris & Essex 3½s-2000 What this means of course, is that not only does Bondex attempt to classify bonds on a rating scale involving 100 grades (as against Moody's nine and Fitch's twelve), but Bondex officials claim to differentiate as between bonds of the same grading [13]—an achievement which it is difficult to believe is humanly possible.

It is also a matter of interest that in this listing of bonds according to quality, the nature of the industry is included in the grading. Consequently any bond of a given grading is allegedly the investment equal of any other bond of the same grading irrespective of industry (ignoring for the moment the extremely slight alleged difference between the position within a given grading). This follows, of course, from the fact that the gradings are based, in part if not entirely, upon the quality ratings already assigned by the four principal agencies, which, as has already been shown,[14] all assert that the nature of the industry has been included in the rating.

Further illustration of the interest of commercial banks in this principle of obtaining "the most in rating for the money" is found in a publication which arose out of the proclamation by the United States Comptroller of the Currency regarding "eligible" investments for national and other Federal Reserve banks.[15] Somewhat similar to the Bondex plan is the layout of the "eligible list" distributed in book form by the Manufacturers Trust Company of New York to its correspondent banks and others. In this list bonds are grouped alphabetically

[13] In the February, 1936 issue of the *Bond Index*, for example, 31 issues of operating railroads alone are given the rating 100. According to the plan stated, each of these issues carries relative investment merit in direct line with its position in the all-100 list of 31 operating-railroad issues.

[14] *Supra*, Chapter 4.

[15] See Chapter 3, footnote 29.

and also by the four principal classifications as to "industry": railroads, utilities, industrials, and foreign. Within each of these classifications, the bonds are listed according to their relative investment merit, beginning with the highest grade and going step by step to the lowest. It is significant that the basis of grading is principally the averaging of the quality ratings of the four main rating agencies.

The average rating is an arithmetical average computed by assigning a numerical value to ratings given by the following statistical organizations: Moody's Investors Service, Standard Statistics Company, Poor's Publishing Company, and Fitch Publishing Company.[16]

It is also noteworthy, so far as the principle of investing in yields by ratings is concerned, that within each "average rating" the bonds are listed according to price, the lowest-priced issue first, the highest-priced last. The investor's comparisons would be even more facilitated if, within each average rating, the issues were listed according to yields rather than prices, starting preferably with the lowest and proceeding to the highest yields.

Is It Practical?—If one considers simply the bases of the quality ratings and the natural conclusion that if the ratings are properly assigned, yields should vary inversely with the ratings, one must admit that the principle of investing in yields by ratings is sound and expect market experience to confirm this conclusion. If experience does not support such a conclusion, it must be that some market factors have not been accounted for and that the ratings have not been properly assigned.

Because of the widespread interest in the question and the bearing which it has upon the present study, experiments were conducted to ascertain the extent of success or failure which would follow operations based upon this principle. Tests were made on as many issues as were reasonably admissable for such purposes. In these tests the hypothetical trader has been limited not only to the bonds included in Appendix A, but he

[16] *Investment Service,* Manufacturers Trust Company, New York, February 28, 1936, first unnumbered page preceding lists. Data in this booklet were compiled by the Securities Tabulating Corporation, New York.

has been forced to sell and to buy only those bonds which were at the extremities in yields in their own classes. Also, he was forced to conduct and account for his trades only on certain dates: the mid-July dates used throughout the statistical tests of the present study. It is evident that this laboratory method restricted the trader to the sale and the purchase of whichever bonds happened to conform to the specifications outlined above and that no personal judgment entered into the transactions. Further, no bonds rated below B+ (Moody ratings) were purchased, because B+ is generally recognized as the rating below which various degrees of speculation enter; supposedly no speculative features are involved in bonds rated B+ or higher.

If, for example, we look at the market as of July 15, 1929, we find that of all A+ bonds in the entire testing group of 363 issues of all ratings, Baldwin Locomotive 5s-1940 afforded the lowest yield to maturity: 4.23%. At the same time another A+ bond (Chicago Union Station 6½s-1963) was yielding 5.65%, the highest yield for any A+ bond. On the theory that he should obtain "the most in rating for his money," the investor should certainly exchange, for he would be rewarded by a gain of 1.32% yield to maturity, which would be 31% more income to maturity than he was receiving from the Baldwin Locomotive bond. On the face of it, this appears to be a logical transaction, and it is therefore of interest to follow it through.

For this purpose, it was necessary to consider not only the interest received during the period held but also the market value at the end of that time—the latter on the ground that the chief means of the reacquirement of principal is through sale in the market. Since the value of a bond at the beginning of such a transaction is equal to the market price at that time plus accrued interest, the value at the end of the period is likewise the market price plus accrued interest. The return is the amount of interest actually received during the period plus or minus any appreciation or depreciation in the value as defined. This all-inclusive return may then be stated as a percentage of the original amount of the investment, being

either a plus or a minus quantity depending upon the course of the market for each bond and the amount of interest received.

On this basis we find that Baldwin Locomotive 5s-1940, which were sold, would have given a net return of 5.1% by the end of one year, while Chicago Union Station 6½s-1963, which were acquired, would have returned 7.3%. So far, so good; the exchange was profitable from all points of view that have been considered.

As any thoughtful investor knows, it is necessary to experiment with many such operations before any valid conclusions can be drawn. This, of course, was done, not only exchanging A+ lowest-yield bonds for A+ highest-yield bonds, but also for A, A–, and B+ issues.

The second exchange in the A+ group, for example, involved the release of Norfolk & Western 4s-1996 yielding 4.38% in favor of Carolina, Clinchfield & Ohio 6s-1952 yielding 5.57%, representing a very substantial gain in yield. By the end of one year, however, the issue sold had allowed a return of 8.2% as against a return of 6.6% from the issue acquired. Thus the exchange, in these terms, was unprofitable.

The third exchange in the A+ group required the sale of Atchison, Topeka & Sante Fe general 4s-1995 yielding 4.45% in favor of Liggett & Myers 7s-1944 yielding 5.51%, again a very substantial gain in yield. By the end of the year the issue sold had given a return of 10.9% as against a return of 11.0% from the issue acquired, an exchange which was profitable only to a very slight extent.

In further illustration, and still within the A+ class, Pennsylvania Railroad 4½s-1960 yielding 4.52% was exchanged for New York Edison 6½s-1941 yielding 5.23%. At the year-end accounting the Pennsylvania issue had given a return of 6.1% as against an 8.0% return from the New York Edison obligation. Thus again a profitable switch was recorded.

It would be advisable, statistically, to continue such hypothetical transactions through a long list of bonds. Such a procedure, however, was impossible owing to two circumstances: (1) the fact that the original testing group of 363

bonds of all ratings did not afford a very large bond population from which to draw, and (2) the fact that through the process of exchanging the lowest-yielding for the highest-yielding bonds within the ratings defined by the exchanges, then taking the next-lowest-yielding against the next-highest-yielding bonds, and so on, the process of elimination forced the comparative yields of the issues sold and the issues bought toward each other to the extent that after several such exchanges in each rating the "sell" yields and the "buy" yields approached each other so closely as to give the proposed exchanges a doubtful foundation. It was found that, in general, four such transactions were possible in each rating group, and consequently the exchanges within each rating were limited to that number. Later, in some exchanges to be described below, the circumstances did not allow even that many.

No attempt will be made to give the details of these hypothetical transactions. Suffice it to state for the present that the findings were so mixed that no valid conclusions could be drawn therefrom.

A Further Development.—Another way to experiment with such trading methods would be to add an improvement: to require that not only must a higher yield be obtained but also that a better bond be acquired in the transfer. And if ratings are good indicators of inherent investment value, then any bond of higher rating is a better bond. One banking author has already recorded the banking attitude (the aim toward higher-rated bonds) in his statement that

> In making exchanges, I have found it advisable to set an objective. . . . In some cases I may want to make an exchange merely to improve the rating.[17]

Similarly, one authority on securities markets points out that

> An investor holding a large amount of the most conservative lowest yielding bonds may find it desirable to accumulate securities of lower rating but higher yield.[18]

[17] Guy D. Sargent, "How We Improved Our Bond List," in the *Rand McNally Bankers Monthly*, Vol. 52, No. 5 (May, 1935), p. 294.
[18] Charles A. Dice, *op. cit.*, p. 583.

Certainly it follows that if the investor can obtain with his higher yield an equal rating, or, better still, a higher rating, he has concluded a better transaction than that suggested by Dice.

If this assumption be valid, it would be advisable to exchange, for example, the lowest-yielding A bond for the highest-yielding A+ bond if the latter yields more than the former. If the investor did this on July 15, 1929 from among the 363 issues of this study, he would have sold Northern Pacific 4½s-2047, rated A, yielding 4.71% and purchased in their stead Chicago Union Station, rated A+, yielding 5.65%. Likewise, he would have sold Erie Railroad Prior Lien 4s-1996, rated A–, yielding 4.84%, and purchased Wisconsin Central 4s-1940, rated A, yielding 5.84%. In these and many other cases he would have acquired allegedly better bonds affording greater yields to maturity. Here again, however, the findings, based upon transactions conducted in strict accordance with the rules set forth above, are far too mixed to allow significant conclusions.

Injecting Stricter Requirements.—Not satisfied with obtaining a higher yield in a bond rated one class higher, the investor might conceivably demand a bond rated two grades higher. Thus, he might seek a higher yield in an A+ bond than he has in an A– bond. If he did this, he would have sold, for example, Missouri-Kansas-Texas 5s-1962, rated A–, yielding 4.94%, and purchased in their place Liggett & Myers 7s-1944, rated A+, but yielding 5.51%. Within one year the issue sold allowed a return of 7.9%, while the issue acquired returned 11.0%. Likewise, among many others, he would have disposed of American Rolling Mills 5s-1948, rated B+, yielding 5.36%, and purchased King's County Elevated guaranteed 4s-1949, rated A, yielding 5.61%. Within one year the issue sold yielded a return of 8.2% as against a return of only 4.8% from the issue purchased. In this part of the experiment, although the results were still spotty and unconvincing, they were definitely more satisfactory than in the tests involving equal-rating and one-rating-higher switches.

Still not satisfied with his exchanges, the investor might even seek a three-ratings improvement together with his higher yield. Let it be emphasized that this procedure is commonplace in the management of the bond portfolio in thousands of commercial banks. As referred to by one author, one may regard with favor the

> . . . opportunity of transferring funds from a B-rated bond into an A-rated bond, particularly at such a small difference, excluding, of course, the fact that the income on the higher grade bond is about a point less.[19]

Of course, if one could transfer from a B-rated bond into an A-rated bond *without* the loss of "one point" in income, indeed with a gain in income, one would be doing even better than Bushnell suggests. On this basis the investor would have sold, for example, Boston & Maine 5s-1967, rated B+, yielding 5.32%, and purchased Chicago Union Station 6½s-1963, rated A+, yielding 5.65%. By the end of one year he would have obtained from the released issue a return of 11.8% as against 7.3% from the acquired issue. On the other hand, he would have sold one issue which, by the end of the year, had yielded a return of 8.2%, as against a return of 11.0% from the issue purchased. Only four such exchanges (three ratings higher with higher yields) were possible from the entire testing portfolio of 363 issues.

Seeking the extreme in this plan of operation, the investor in mid-July, 1929 could have discovered a B issue (Denver & Rio Grande Western 5s-1955) yielding 5.29% and at the same time an A+ issue (Chicago Union Station 6½s-1963) yielding 5.84%. Had he entered into this five-ratings-higher exchange he would have lost a return at the end of one year of 2.0% and gained during the same period a return of 7.3% on the bond acquired. This, however, was the only possibility of such an extreme jump in rating affording at the same time an improvement in yield.

Statistical Findings.—Thus far in this discussion we have examined the results for only one year. As a matter of fact,

[19] George D. Bushnell, "Bond Revisions Upward," in the *Rand McNally Bankers Monthly*, Vol. 52, No. 7 (July, 1935), p. 430.

these calculations were carried on for one-, three-, five-, and six-year periods. The complete list of bonds involved, together with the exact exchanges made, the applicable ratings, and the yields existing at the time of exchange are shown in Appendix E.

In order that the results of these hypothetical switches might be crystallized for comparison, weighted arithmetic means were obtained for all types of exchanges. Thus, as of the end of five years, in the one-rating-higher exchanges, A to A+ transactions showed an average return for the issues sold of 10.7% as against an average return of 32.5% for the issues acquired. Such data for all the groups involved and for all the tested periods are shown in Appendix F.

Further, in order that these averages might be more easily compared, weighted arithmetic means were obtained for all *general* types of exchanges. In this way, it was found, for example, that on one-rating-higher exchanges of all types, by the end of five years the issues sold allowed a return of 12.2% (not per year but for the five years) as against a comparable return of 16.3% from the issues purchased. These data are shown in Appendix G.

Comparison of these data can best be made in a rough way by indicating whether, on the whole, such general types of exchanges were profitable or not—not how profitable, for the number of observations available does not really allow such refinement in the results. In Table 51 a plus mark is intended to convey a profitable experience, a minus mark an unprofitable experience.

TABLE 51. PRESENCE OR ABSENCE OF PROFIT IN HYPOTHETICAL TESTS OF INVESTING IN YIELDS BY MOODY RATINGS, JULY 15, 1929

General Type of Exchange	One Year	Three Years	Five Years	Six Years
Equal-Rating	—	+	—	—
One-Rating-Higher	—	+	+	+
Two-Ratings-Higher	—	+	+	+
Three-Ratings-Higher	—	+	—	+
*Five-Ratings-Higher	+	+	+	+

* Only one exchange included.

From this tabulation it is clear there was a definite tendency for the trades to be unprofitable at the end of only one year but profitable after three or more years. In other words, one may infer that the market was a better guide to the investment merit of these bonds (as measured by the subsequent market action and the payment of interest when due) for the relatively short term, but the ratings were better guides for the longer periods.

Pessimistic Ratings.—As shown in Chapter 10, pessimistic ratings were somewhat more successful devices for investor protection during the depression period than were the ratings of any single agency. In view of this, it behooves the investor to consider the application of pessimistic ratings to the practice of investing in yields by ratings.

With this in mind, hypothetical exchanges on the basis of pessimistic ratings were made on the identical bases and to the same extent as they were made by Moody ratings. The exact switches are shown in Appendix E, including the names of the bonds concerned, their ratings, and yields at the time of exchange. Following the procedure outlined above for similar exchanges by single-agency ratings, the results are presented in terms of averages in Appendix F as to specific types of exchanges (for example, A to A+), and in Appendix G as to general types of exchanges (for example, one-rating-higher exchanges). In addition, all of these exchanges were carried out through the one-, three-, five-, and six-year periods. The only noteworthy difference between the switches on the single-agency-rating basis and those on the pessimistic-rating basis is that on the latter it was possible to effect a six-ratings-higher exchange, this switch, however, being identical with the five-ratings-higher exchange recorded in the transactions by single-agency ratings.

Like the results for single-agency trades, the pessimistic-rating exchanges may be summed up in tabular form (Table 52).

Here again it is clear that there was a definite tendency for the exchanges to be more profitable after one year. One may, therefore, infer, as in the case of the single-agency rat-

TABLE 52. PRESENCE OR ABSENCE OF PROFIT IN HYPOTHETICAL TESTS OF INVESTING IN YIELDS BY "PESSIMISTIC" RATINGS, JULY 15, 1929

General Type of Exchange	One Year	Three Years	Five Years	Six Years
Equal-Rating	—	+	+	+
One-Rating-Higher	—	+	+	+
Two-Ratings-Higher	—	+	+	+
Three-Ratings-Higher	+	+	+	+
*Six-Ratings-Higher	+	+	+	+

* Only one exchange included.

ings, that the market proved to be a better guide to investment merit (as measured by the subsequent market action and the payment of interest when due) than the ratings, but that the ratings were better guides for the longer periods. In this instance, however, one may add the further point that the pessimistic-rating basis was even more effective than the single-agency basis, indicating anew the superiority of pessimistic ratings.

Additional Considerations.—It is generally recognized that there is among investors some degree of resistance to paying a premium on a bond. How important a factor this is can never be ascertained, for it is entirely non-statistical in character and unmeasurable in either extent or intensity. It is obvious, however, that this resistance might easily have some bearing upon an investing-in-yields program.

Another element entering into the exchange of bonds on the bases of ratings and yields is the consideration of industry. It will be recalled, and it is shown in Appendix E, that many of the exchanges involved a transfer from one industry into another. This in itself might be unwise, since it is elementary that some industries are peculiarly susceptible to variations in general business, that some are more or less depression proof, and that some industries are definitely on the wane and will eventually become extinct. Hence, it may be claimed that one should never transfer from one industry into another unless there are very good reasons for doing so. This, however, fails to do justice to the ratings if they are what the agencies claim

them to be; for, as already shown,[20] the ratings supposedly include the nature of the industry, its long- as well as its short-term outlook, the probabilities of casualty following from political, economic, social, scientific, and technological developments as well as from acts of nature so far as these can be foreseen.

Indeed, the rating organizations go so far in this respect that one of the officials concerned has expressed the intention and aim of his company definitely to rank rather than to rate bonds. This ambition takes the point of view that no two issues are identical. Like real property, every bond issue is unique; consequently, no two issues can be exactly equal in investment merit. Ranking, of course, is an attempt to recognize this obvious truth. Since, however, the rating agencies have fallen far short of perfection in the simpler process of rating, it does not appear probable—one may well say it does not appear possible—that they will be more successful in coping with the increased difficulties presented by attempts at ranking.

[20] *Supra*, Chapter 4.

CHAPTER 14

SUMMARY AND CONCLUSIONS

The purpose of this chapter is to summarize what has been discussed above and to set forth whatever conclusions may reasonably be drawn from the data presented.

Preceded by their cousins, commercial credit ratings, security ratings were first published in 1909 by John Moody. They were welcomed by commercial bankers and individual investors but frowned upon by corporations, investment bankers, and speculators. Investors appreciate security ratings, especially bond ratings, because the task of analysis is made easier and, in many cases, completely eliminated. Corporations, in general, are not fond of the ratings because the agencies pry into the affairs of the enterprise and because the assignment of a low rating does the corporation's credit standing no good. Investment bankers generally harbor no love for the rating system, since it is generally conceded that the ratings greatly influence the bankers' customers. Although this influence may operate beneficially to the bankers in the case of highly-rated corporations, investment bankers on the whole would be glad to witness the decrease of the system in view of its effects upon customers who might have been interested in issues relegated to the lower end of the rating scale.

In addition to total-quality ratings, other forms of security ratings have been developed. These include salability ratings and market ratings. Many observers are wont to think of the designation "legal" as a form of rating.

Since their inauguration security ratings, but more specifically bond ratings, have become widely adopted as authoritative symbols of investment merit. Finding their greatest use among commercial bankers and private investors, bond ratings have become an established institution in the field of finance. Some use of them is made in the selection of investments for trust

and for insurance funds, although in both cases the importance of the ratings appears to diminish with increase in the size of the trustee organization or of the insurance company. Use of the ratings among investment trusts and investment companies is probably of no great importance, although a few indentures stipulate ratings as the sole basis of bond portfolio changes.[1] Governmental supervisory commissions, the office of the Comptroller of the Currency, and the Federal Reserve banks employ bond ratings in examining the portfolios of banks under their jurisdiction. Indeed their use in this connection by bank (and insurance) commissions of most of the states as well as by the federal government is perhaps the most important assignment which the ratings have been given.[2]

The use of bond ratings has both a psychological and an economic basis. Man's inherent laziness and his desire for support and approval constitute the psychological basis. The economic basis is found in the reduction of labor which would otherwise be necessary for careful investment. Indeed, it is not improbable that, in the absence of ratings, some investors would refrain from investing their funds in corporate bonds. From this one may infer that the existence of the rating system probably induces a flow of some capital into the bond market which otherwise would not take place at all. But it is probably true that the amount of funds affected in this way is relatively small.

Any institution of such wide acceptance naturally has important influences. Pressure is exerted upon corporate policy in the matter of the frequency and adequacy of corporate reports. The rating system makes a healthy financial condition all the more desirable, since low ratings reduce the credit and commercial standing of the corporation and affect its present and future security issues. The existence of the ratings restricts to some extent the valuation of rated issues and therefore tends roughly to define the limits to which investment bankers may go in appraising specific bonds for their customers. The ratings also aid investment bankers in the sale

[1] *Supra*, Chapter 3.
[2] *Ibid.*

of specific bonds when the assigned ratings are high. Investment counsellors are affected somewhat differently. If the rating system were removed suddenly, there would probably be a very rapid increase in the number of investment counsel offices. It is altogether probable that such new offices would attempt to frame their service and its cost in such a way as to make it available to small investors, especially the smaller banks. Concerning the bond market itself, there are reasons for believing that bonds tend to be valued at the average price (in terms of yield) for all bonds of the same rating and that ratings tend to stabilize the market value relationship between bonds of the same rating.[3]

Although reliance upon ratings may not be offered as conclusive proof of prudent action on the part of fiduciaries, adequate authority has been cited to show that when a fiduciary is not restricted by the laws of the state or by the instrument creating his trust he may rely to a reasonable extent upon the ratings as a basis for his actions and that he may offer such evidence as corroborative proof of ordinary care and prudence in the investment of trusteed funds.[4]

It is generally recognized that ordinarily financial and other data submitted by corporations to their stockholders are inadequate for an accurate appraisal of the investment merit of their securities. Rating agencies, therefore, are forced to make their appraisals on the basis of the quantity and quality of such data which are actually available—a fact which in itself is bound to impair the accuracy of their judgments.

It has been made clear that the rating agencies' principal bases of appraisal are the legal standing of the issue, the past earnings of the enterprise, and the nature of the industry.[5] Some of the minor considerations are the position of the company within the industry, the degree of marketability, the banking relations of the enterprise, the recency of the issue, and a miscellaneous group of other details, such as the presence or absence of a sinking fund, the accounting policies of the corporation, etc. Some question has been raised as to the treat-

[3] *Ibid.*
[4] *Ibid.*
[5] *Supra*, Chapter 4.

ment of past earnings as compared with probable future earnings and as to the consideration of the future of the industry.[6] Since many of these factors are really matters of judgment and entail foresight, the rating agency's assertion that the ratings are scientific and do not rest on opinion must be said to be without foundation.[7]

Although rating agencies claim both accuracy and conservatism for their appraisals, it is clear that under certain conditions accuracy and conservatism are incompatible. Accuracy involves exactitude or precision, while conservatism connotes a leaning toward the less optimistic on the upward scale and the less pessimistic on the downward. It is possible that a leaning toward conservatism might be interpreted as a desire to regard the issue in its worst light.

In the matter of the importance attributed to various qualities of bonds by the different agencies, it is of interest that some agencies allow greater weight for certain factors than do others. Thus, one appears to emphasize legal standing of the issue; another apparently allows more weight than do the others for marketability; another stresses the trend of earnings, and so on. In any case it is clear that the assertion of one agency that its ratings are scientific is open to question. The experience described in earlier chapters demonstrates, among other things, that accurate analysis of a financial report depends as much upon ability to foresee the effects of the changes and conditions contained in the report as upon the analyst's ability to grasp its technical details. It is thus evident that prediction is as necessary a part of the rating process as the analysis of the past.

It has been pointed out that although detailed explanations of rating symbols are published by the rating agencies, many investors do not take the trouble to study them.[8] With this in mind, all the rating agencies offer abbreviated descriptions. Examination of the rating symbols of the several agencies reveals the existence of rating scales of from nine to nineteen

[6] *Ibid.*

[7] In recent years, rating agencies have tended to modify claims as to accuracy, scientific basis, etc. See, for example, *Standard Bond Investments,* General Section, Vol. 5, No. 9 (March 2, 1935), Pt. 3, Alphabetical Section, p. 3.

[8] *Supra,* Chapter 5.

grades, the number of grades most commonly used being twelve.

Some confusion results among investors from the fact that each rating agency has adopted a set of rating symbols different in number and in designation. In view of this, it is the opinion of this writer that uniformity is desirable—at least from the investor's point of view. Since each agency cherishes its own set of symbols, some difficulty might be encountered in inducing the rating organizations to agree upon a set of uniform symbols. The present writer contends, however, that such agreement would be beneficial to investors and rating bureaus alike, and therefore has proposed such a set of symbols.[9]

So far as the data of this study permit, it can be inferred that Fitch tends to rate bonds higher than any of the other agencies and that Poor tends to rate them lower. This conclusion is only tentative, however, because the data are not extensive enough in time to warrant unqualified conclusions on this point.

Looking at the evidence from the point of view of market action, it is clear that, in terms of averages, the ratings operate quite effectively to protect the investor against loss, even over a period longer than should be contemplated by the investor without a reappraisal of the status of his investments. The record is not perfect, even in terms of averages, but it is certainly beyond reasonable criticism.[10]

In terms of particular cases, however, the investor should be warned that departures from average may be very great, that the assignment of an A+ rating to an issue does not assure the investor that the issue will stand up any better relatively in the market than will a B+ issue, or, in fact, a bond of any other rating. A case in point is that of New York, New Haven & Hartford 3½s-1997, it 4½s-2003, and its 5s-2003, all rated A+ by Fitch in 1929. By the middle of July, 1934 these issues were valued in the market at price relatives of 121.3, 71.2, and 72.0 respectively. Yet all were appraised equally

[9] *Ibid.*
[10] *Supra*, Chapter 7.

in 1929 as having substantially the same investment merit. It is this sort of situation which causes one to question the implications of Lincoln's sweeping generalization that ordinarily no bond rated below [A] should be bought by the small investor.[11]

It has been found that, by and large, the average market action of bonds of a given rating was to be found within the ranges of market action of bonds of any ratings over the same length of time.[12] To illustrate: using Moody ratings, within one year from the base date the average relative market price of B– bonds was 91.8; this price was in effect, however, for some bonds of any rating at the same time. As further illustration: at the end of six years the average relative market price of A bonds was 92.5; and this average was to be found at the same time for some bonds of any rating. These facts emphasize the limitations involved in regarding the record of the ratings solely in terms of averages.

It is generally understood that railroad and public utility issues are more easily and more accurately appraised than those of other industries. The reason is that these classifications afford the rating agencies more adequate information than is generally available for industrial issues. Moreover, the term "industrial" includes many different types of enterprise, and it would not be unreasonable to suppose that the rating agencies would be less proficient in estimating inherent value in the securities of such widely diversified enterprises than in rails and utilities. Nevertheless, the record of the six years covered in this study reveals that, as the traditional superiority of railroad issues was upset in the depression market, so likewise the rating agencies failed to predict accurately the future of the carriers as a whole and did remarkably better in a rating of the less-known field of industrials.[13]

Inspection of the untabulated data of the study indicates that issues on which the rating agencies agree as to grade have less tendency to fall in market value than those on which

[11] Edmund E. Lincoln, *Testing Before Investing* (McGraw-Hill Book Co., Inc., New York: 1926), p. 95.
[12] *Supra*, Chapter 7.
[13] *Ibid.*

there is disagreement, provided the fall is measured as of the highest assigned rating. Especially is this true when the disagreement between ratings is measured by a two-rating difference.

It was also observed that there were many more abnormalities (market movements away from the average of the designated classes) in the direction of lower market values than there were toward higher market values.[14] Thus, if a group of bonds was selling at 70 on the average, and some time later the average market price of the group moved to 60, more of the bonds would probably be quoted around 30 than would be quoted around 90. This appears to be true for both a falling and a rising market. From this we may suppose that the rating agencies tend generally to rate as high as possible rather than as low as possible[15]—a probability which is quite logical since there is a constant pressure upon the rating agencies for higher ratings, this pressure being exerted by the corporations concerned and by investment bankers. This tendency toward more departures below the average than above is, of course, a logical result of what may be termed the natural rate of mortality in the bond market.

It has been shown that, assuming a fixed portfolio with fixed ratings, there was a tendency for the average relative market prices of bonds of different ratings to lose some of their uniformity as time went on.[16] This was due, of course, to the effect of exceptional cases which crept into the situation of specific bonds as time progressed.

Likewise, as time went on, there were wider and wider ranges in the relative market action of bonds of given ratings.[17] This finding is at least of equal importance to that of the discovery that rated bonds, on the average, corresponded marketwise to differences in ratings, for the investor is certainly more interested in the behavior of particular issues than he is in averages.

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[14] *Ibid.*

[15] This is not contradictory with an earlier statement that some of the rating agencies claim to rate conservatively. See, for example, *supra*, Chapter 4.

[16] *Ibid.*

[17] *Ibid.*

In the matter of yields, the findings are similar to those found for market action, which, of course, was to be expected, for yield is a function of price. It was found that, in terms of averages, bonds were valued in the market in accordance with the ratings assigned to them; that, as time progressed, even the averages lost some of their uniformity of action; that many bonds showed yields materially different from the average of their class; and that, assuming a fixed portfolio with fixed ratings, these disparities widened as time passed.[18]

It was found that although bond yields generally tend to move in the same direction at the same time, there may be some marked differences in the degree of movement, even in terms of averages, of bonds of specific ratings.[19] Low-rating bonds were more affected in both falling and rising markets, and there is evidence that during periods of easy money rates, the range of yields of high- and medium-rated bonds tends to contract, this being due presumably to the pressure of money for an outlet.

It appears that there has been, in general, a greater gap in the market's valuation of A– and B+ bonds than of those of other ratings. Whether this was due to the rating agencies' description of the B+ symbol or to the psychological effects of getting into the B's rather than the A's or to some other factors cannot be shown. Nor does it necessarily follow that this relationship will continue in the future. There is, in fact, some reason to believe the contrary, for the new ruling of the United States Comptroller of the Currency rather definitely allows B+ bonds to carry investment standing acceptable for the funds of national and other Federal Reserve banks. If, therefore, there is to be a significant gap in the future, it would logically occur below the B+ line.

From the data presented in earlier chapters, some analysts might claim that the highest grade bonds (those rated A+) tend to be overpriced in the market in comparison with issues of lower ratings. This may be due, in part at least, to the fact that institutional investors find themselves practically

[18] *Supra*, Chapter 8.
[19] *Ibid.*

forced into this group of securities irrespective of the conditions of the money market. It is understood, of course, that money market conditions may alter the degree of this pressure to some extent, but under any conditions there remains the persistent movement of institutional funds into this restricted area. In this connection it is noteworthy that some institutional investors are in some respects less subject to the effects of changes in the purchasing power of the dollar, whether from the revaluation of gold, inflation, reflation, or deflation. Insurance companies, for example, and banks make their contracts in terms of currency dollars, the same kind of dollars as are received in their dealings with customers, and thus such investors, so far as their obligations go, are not directly concerned with whether the purchasing power of money has risen or declined. The individual investor, on the other hand, must of necessity be so concerned.

In addition to the normal concentrated demand of insurance companies, universities, libraries, trustees, and other institutional investors for the highest or the very highly rated obligations, there is now the further pressure of demand for such securities by Federal Reserve member banks, owing to the ruling on investments by the Comptroller of the Currency.[20]

If it is true that the highest grade (A+) bonds tend to be relatively overpriced in the market, it might be considered expedient for the investor to judge the merits of selecting high, though not the highest, grade issues wherein the yields are usually higher and, of course, the risk apparently greater. He should do this, however, only if he is able to bear the risk. Such a policy, however, is justified only if it proves to be successful, and as Graham and Dodd crisply remark,

> If safety is to be judged by the result, we are virtually begging the question, and come perilously close to the cynic's definition of an investment as a successful speculation.[21]

Evidence has been introduced to show that the usefulness of average yields by ratings, as computed and published by

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[20] *Supra*, Chapter 3.

[21] Benjamin Graham and David L. Dodd, *Security Analysis* (McGraw-Hill Book Co., Inc., New York: 1934), p. 53.

rating agencies, is open to question.[22] Such averages not only vary from one agency to another, but the computation of all such averages is based upon procedures which make them either inapplicable or qualified in application. Rating changes affect such averages markedly. Changing the ratings of constituent issues is, in fact, part and parcel of another practice, that of changing the issues themselves. Since it is customary to remove the constituents when, in terms of yield, they move out of line with other issues of the same rating and therefore affect the average yield for that rating in such a way as to bring the average yield too close to that of the bonds in the rating next above or next below, such removals and substitutions enable the rating agency to keep the averages "properly in line" with each other. In addition to changing the constituency of the lists from which such average yields are computed, rating agencies also exclude from their calculations any "unusual" yields, thus keeping the averages at levels which, in the opinion of rating bureaus, are representative and which continue the long-preserved principle that such averages never overlap. From the point of view of those who are dependent upon such averages for comparison with the yields of their own portfolios some of their value is lost since the averages are "refined" by the exclusion of issues carrying yields which the rating agency considers "non-representative." Thus the averages are inapplicable for comparison with average yields from portfolios acquired sometime in the past and are limited in their comparability with yields of portfolios even in terms of present ratings. It should be understood, however, that rating agencies make no claim or implication that such averages may be used for comparison with yields on portfolios acquired in the past. Such use, where it exists, is the idea of the investor himself. It is true, of course, that the average yields by ratings, as published, may have some possible value in judging current conditions in the money market.

Regarding defaults, it has been found that the ratings are fairly good indicators of the probability of default.[23] The

[22] *Supra*, Chapter 8.
[23] *Supra*, Chapter 9.

record during the six tempestuous years of the present study does not reveal a perfect score, but considering the circumstances, the rating agencies did remarkably well. As measured by long-range results, their greatest error, on the whole, appears to have occurred in the A rating, but, by and large, defaults occurred, on the average, pretty much in line with the relative ratings. Here again, of course, there were abnormalities. Some A issues defaulted while some B issues did not; even some A+ issues were found to have defaulted while some C+ issues did not. It is these abnormal cases, however, which cast doubt upon the wisdom of depending entirely upon the rating system for long range purposes. As measured by rating changes downward preceding default, even a casual inspection of the rating change data (treated in Chapter 12) reveals that, excepting in issues which were already rated very low, changes in rating downward are invariably made before actual default occurs. It would be almost the height of analytical deficiency if the rating department, with all its avenues of statistical and other information, should fail to recognize the practical possibility of default at least some weeks or months prior to the actual occurrence. To foresee it some years in advance is much more an achievement, and, on the whole, it must be admitted that even on this score the rating agencies did remarkably well.

Since it has been shown that the chances of subsequent distress are, on the whole, definitely lower in bonds of high ratings, it follows that the need for diversification is not as important in portfolios composed principally of such holdings as in portfolios of lower ratings. It is entirely reasonable to assume, therefore, that the practice of diversification is probably carried too far in some institutional and trust portfolios. This point of view assumes, of course, a continual re-checking of the ratings, for, as shown by the statistical tests of this study, the ratings are not sufficiently reliable as long-term guides. This is not to advocate the banishment of diversification as a general principle of investment, but it is clear that the higher grade the investments, the less is the need for wide diversification. But confinement of one's investments to A+

issues would not necessarily eliminate the need for some reasonable degree of diversification.

Attempts have been made from time to time to iron out the disagreement between agencies as to the ratings properly assignable to specific bonds by averaging the different ratings. Evidence has been introduced to show that a still safer procedure is to accept as proper that rating which is the lowest assigned to the particular bond by any of the agencies.[24] This has been designated the pessimistic rating. Such a method of appraisal should afford the investor greater protection against loss, since the tendency to overrate has been eliminated in part. Statistical data have been presented to support this hypothesis with very favorable results. It has been shown that not only was a more "normal" distribution of assigned ratings obtained, but that measured in terms of market action, the yield record, and defaults, the pessimistic rating device proved itself worthy of the consideration of all rating users. The market action and yield records were superior both in terms of averages and in ranges, thus affording strong support for the adoption of the pessimistic rating.

Although some efforts have been made by investment houses to give a composite rating for an entire portfolio (usually of an investment trust), not by averaging the ratings of the separate agencies, but by averaging the ratings of one agency on each bond in the portfolio, no system of portfolio quality appraisal has been used so extensively as the desirability weighting system now employed by Federal Reserve banks in their supervision of member bank bond accounts. Assuming the ratings to be properly assigned, this principle of portfolio appraisal should receive the approval of those whom it affects. In terms of averages, it should be very effective in foreseeing dangers of loss. The cornerstone of the system, however, is one which it is very easy to set inaccurately. Contrary to the supposition that any chain of numbers would serve properly as the rating weights, it is the contention of this writer that the weights must be set with a view to two factors: a sufficient spread between the weights assigned to each rating so that the

[24] *Supra*, Chapter 10.

total indices of quality may not too closely approach each other for different bond lists, and a gradation more or less in keeping with market and default experience as to specific ratings in times of economic stress. A table of weights is offered which satisfies these requirements.[25]

An important practice of the rating agencies is that of changing the ratings. Popular notions concerning rating changes involve two theories: one of sequence, the other of causation. The results of our statistical investigation lend no substantial support to either of these.[26] So many cases are available which both affirm and deny the theory of sequence that no sure conclusions can be reached. And since there is no substantial support for the theory of sequence, there can be none for that of causation.

Some evidence has been adduced to show that rating agencies are more stable in (less likely to change) their judgments as to bonds given the highest rating, and this is especially the case when the agencies agree as to the assignment of the highest rating.[27] It is also clear that an agency which rates higher than the others or which assigns high ratings to more issues will probably be forced to make more revisions of its ratings in the event of an economic crisis. At times the number of changes or their degree may be far more than one would think possible.

A number of different types of market action preceding and following changes in rating both upward and downward have been cited, and comparison has been made with the market action of the appropriate Dow-Jones bond averages during the same period. Although such comparisons are extremely interesting, they are so diverse, and the multifarious data of this phase of the study are so inconclusive, that no support is found for the proposition that upon receiving word of a change in rating upward or downward the investor should purchase or sell respectively. The investor, therefore, is not justified in resting solely upon the fact of a change in rating as to the acquisition, retention, or disposition of any specific bond.

[25] *Supra*, Chapter 11, Table 48.
[26] *Supra*, Chapter 12.
[27] *Ibid.*

One practice in connection with bond ratings has been called investing in yields.[28] Only two considerations are involved: the yields and the ratings. The hypothesis is that since the ratings are widely recognized as authoritative estimates of the quality of specific bonds, the investor should attempt to obtain the highest yield possible within a given rating—the practice to be modified, of course, by the special requirements of the investor's particular situation. The investor is encouraged to follow this practice by the acceptance of ratings as expert appraisals by bank supervisory organizations, by the attitude of rating officials, some rating organizations, and many bond houses. Investigation of the principle to the extent permitted by the testing portfolio of the present study leads to the conclusion that such a practice—the exchange of a low-yielding bond of a given rating for a high-yielding bond of the same rating—is dangerous. The desirability of exchanging low-yielding bonds of a given rating for high-yielding bonds of a higher rating is, however, more apparent. There is, of course, a stronger case in favor of the exchange when the difference in ratings is wider: when the bond acquired is two, three, or even more ratings higher than the bond released. And it is also true that the advantage is greater when the results are measured after a considerable interval of time has passed following the date of exchange. From this it is possible to infer that the market is a better judge of the short-term prospects of specific bonds than are the ratings, but the ratings are superior over longer periods. When such exchanges are made in terms of our pessimistic ratings, the results are better than when engaged in on the basis of the ratings of individual agencies—a fact which adds support to the earlier findings regarding the greater comparative success of pessimistic ratings.

It must be recognized that, considering the magnitude of the task, the rating agencies do a good job, on the average, in approximating the investment worth of bonds when judged in the light of market performance and the default record. This study has shown conclusively, however, that if the ratings are

[28] *Supra*, Chapter 13.

to be used as effective guides, they should be used cautiously, studied carefully, and checked for desirable changes at frequent intervals. Under no circumstances should investors assume, as many do, that the rating is a long-range, scientific statement of a bond's value, for experience has proved that it is neither dependably long-range nor scientific. The point of view should be adopted that there is no such thing as a long-term, safe investment. Contrary to the premises of rating agencies that the system has been perfected, that the ratings are mathematically accurate, that they are scientifically sound, and that they do not rest upon opinion, it is clear that no amount of statistical research or analysis can develop the measurement of risk in a dynamic society to the point where human judgment can be dispensed with or subjective elements eliminated. Much undoubtedly can be accomplished, however, toward developing these means of measurement to the point where the correlation between the degree of risk and the price of capital will be higher, more lasting, and more objective than has been true of the recent past.

In conclusion, it remains to set forth some recommendations for the consideration of the principal rating agencies.

It is clear that the increasing use of bond ratings by investors calls for some action on the part of the rating organizations looking toward the adoption of a set of uniform symbols. Such a move would eliminate most of the confusion resulting from four systems having different numbers of ratings, different symbols, and, in some cases, slightly different meanings.

Ratings should express the same credit risk in any industry. Investors who use the ratings should not be required to consider the nature of the industry in which the corporation is engaged, for that factor presumably has already been included in the rating process. This conflict of understanding should be definitely removed.

The weaknesses of average yields by ratings as published by some of the rating organizations are such as to make them qualified in application. Some of this objection could be removed by the use of medians when the agencies are computing averages. It is doubtful that a yield should be excluded from

the computation simply on the ground that the yield is unrepresentative of the group as a whole.

Above all, the rating agencies themselves should omit all claims to perfection, to a strictly scientific basis, to accuracy, and all other assertions which cannot be supported by the facts, and frankly state that the ratings are merely opinions.

While it is conceded that the rating agencies have succeeded to some extent in affording investors a rough measure of investment merit, it is the opinion of this writer that such efforts should be measured by the yardstick of "discontent." By discontent is meant, not the dissatisfaction inherent in perpetual cynicism nor the lack of appreciation of honest effort. Rather the point of view which should be harbored is the attitude that even an excellent record is not good enough. If motor cars were manufactured capable of obtaining fifty miles of transportation per gallon of gasoline, then fifty miles would not be enough; one hundred miles would be better. So, likewise, until the rating agencies have succeeded in building and operating a system of rating bonds with a record of practical perfection, there will be room for continued improvement.

In view of all the criticism which has been leveled against the rating system as it now stands, it is perhaps wise to consider the ancient maxim of Herodotus:

> There is nothing more profitable for a man than to take good counsel with himself; for even if the event turns out contrary to one's hope, still one's decision was right, even though fortune has made it of no effect; whereas if a man acts contrary to good counsel, although by luck he gets what he had no right to expect, his decision was not any less the foolish.[29]

[29] Herodotus, *Histories,* Book VII-10-D, as translated by George Rawlinson (Macmillan & Co., Ltd., London: 1875).

APPENDIX A

The 363 Bonds of the Testing Group

Adams Express		4	– 1948
Alabama Power		5	– 1956
Alabama Power		4½	– 1967
Allegheny Valley Railway		4	– 1942
Aluminum Company of America		5	– 1952
American Cyanamid		5	– 1942
American Gas & Electric		5	– 2028
American Power & Light		6	– 2016
American Radiator		4½	– 1947
American Rolling Mills		5	– 1948
American Smelting & Refining		5	– 1947
American Telephone & Telegraph		5	– 1946
American Telephone & Telegraph		5½	– 1943
American Telephone & Telegraph		5	– 1960
American Type Founders		6	– 1940
American Water Works & Electric		6	– 1975
American Writing Paper		6	– 1947
Appalachian Electric Power		5	– 1956
Arkansas Power & Light		5	– 1956
Armour (Delaware)		5½	– 1943
Atchison, Topeka & Santa Fe	Gen.	4	– 1995
Atchison, Topeka & Santa Fe		4½	– 1962
Atlantic Coast Line	1st Cons.	4	– 1952
Atlantic Coast Line		4½	– 1964
Atlantic Coast Line	(L–N)	4	– 1952
Atlantic, Gulf & West Indies Steamship		5	– 1959
Baldwin Locomotive		5	– 1940
Baltimore & Ohio		4	– 1948
Baltimore & Ohio		5	– 1948
Baltimore & Ohio		5	– 1995
Baltimore & Ohio	C–	6	– 1995
Baltimore & Ohio		5	– 2000
Baltimore & Ohio		4	– 1941
Baltimore & Ohio		5	– 1950
Baltimore & Ohio		4	– 1959
Bell Telephone of Pennsylvania		5	– 1948
Bell Telephone of Pennsylvania		5	– 1960
Bethlehem Steel		5	– 1942
Boston & Maine		5	– 1967
Boston Consolidated Gas		5	– 1947
Brooklyn Edison		5	– 1949
Brooklyn-Manhattan Transit		6	– 1968

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

Brooklyn Union Elevated	1st	5	– 1950
Brooklyn Union Gas		5	– 1945
Buffalo, Rochester & Pittsburgh		4½	– 1957
Bush Terminal Buildings		5	– 1960
Bush Terminal Company		5	– 1955
Carolina, Clinchfield & Ohio		6	– 1952
Carolina, Power & Light		5	– 1956
Central of Georgia		5	– 1945
Central Pacific		4	– 1949
Central Pacific		5	– 1960
Central Railroad of New Jersey		5	– 1987
Central States Power & Light		5½	– 1953
Certain-teed Products		5½	– 1948
Chesapeake & Ohio		4½	– 1992
Chesapeake & Ohio		4½	– 1993
Chicago, Burlington & Quincy		3½	– 1949
Chicago, Burlington & Quincy		4	– 1949
Chicago, Burlington & Quincy		4	– 1958
Chicago, Burlington & Quincy		5	– 1971
Chicago, Burlington & Quincy		4½	– 1977
Chicago & Eastern Illinois		5	– 1951
Chicago Great Western		4	– 1959
Chicago, Milwaukee & St. Paul	A–	4	– 1989
Chicago, Milwaukee & St. Paul	C–	4½	– 1989
Chicago, Milwaukee & St. Paul	E–	4½	– 1989
Chicago, Milwaukee, St. Paul & Pacific		5	– 1975
Chicago & North Western		4	– 1987
Cricago & North Western		5	– 2037
Chicago & North Western		4½	– 2037
Chicago Pneumatic Tool		5½	– 1942
Chicago, Rock Island & Pacific		4	– 1988
Chicago, Rock Island & Pacific		4½	– 1952
Chicago Union Station		4½	– 1963
Chicago Union Station		5	– 1963
Chicago Union Station		6½	– 1963
Chicago Union Station		5	– 1944
Chicago & Western Indiana		4	– 1952
Chicago & Western Indiana		5½	– 1962
Childs Company		5	– 1943
Chile Copper		5	– 1947
Cincinnati Gas & Electric		4	– 1968
Cities Service Gas		5½	– 1942

Cities Service Gas Pipe	6	– 1943	
Cities Service Power & Light	5½	– 1952	
Cleveland, Cincinnati, Chicago & St. Louis	5	– 1963	
Cleveland, Cincinnati, Chicago & St. Louis	4½	– 1977	
Cleveland Union Terminal	5½	– 1972	
Cleveland Union Terminal	5	– 1973	
Columbia Gas & Electric	5	– 1952	
Consolidated Gas of New York	5½	– 1945	
Consolidation Coal	5	– 1950	
Consumers Power	5	– 1952	
Container Corporation	6	– 1946	
Continental Gas & Electric	5	– 1958	
Crown Cork & Seal	6	– 1947	
Crown Willamette Paper	6	– 1951	
Cudahy Packing	5	– 1946	
Delaware and Hudson	4	– 1943	
Denver Gas & Electric	5	– 1951	
Denver & Rio Grande Western	5	– 1955	
Denver & Rio Grande Western	5	– 1978	
Detroit City Gas	6	– 1947	
Detroit City Gas	5	– 1950	
Detroit Edison	5	– 1949	
Detroit Edison	5	– 1955	
Dold (Jacob) Packing	6	– 1942	
Donner Steel	7	– 1942	
Duquesne Light	4½	– 1967	
Empire Oil & Refining	5½	– 1942	
Erie ....Prior Lien	4	– 1996	
Erie ....Gen. Lien	4	– 1996	
Erie	5	– 1967	
Erie & Jersey	6	– 1955	
Federal Light & Traction (1st stamped)	6	– 1942	
Firestone Cotton Mills	5	– 1948	
Florida East Coast	5	– 1974	
Florida Power & Light	5	– 1954	
Framerican Industrial Development	7½	– 1942	
Francisco Sugar	7½	– 1942	
Gannett Company	6	– 1943	
General American Investors	5	– 1952	(XW)
General Cable	5½	– 1947	
General Petroleum	5	– 1940	
Georgia Power	5	– 1967	

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

Goodrich		6½ – 1947	
Goodyear Tire and Rubber		5 – 1957	
Great Northern		5½ – 1952	
Great Northern		5 – 1973	
Great Northern		4½ – 1976	
Great Northern		4½ – 1977	
Great Northern		4¼ – 1961	
Gulf Oil of Pennsylvania		5 – 1947	
Gulf States Steel		5½ – 1942	
Gulf States Utilities		5 – 1956	
Hocking Valley		4½ – 1999	
Houston Gulf Gas		6 – 1943	
Hudson & Manhattan		5 – 1957	
Hudson Coal		5 – 1962	
Illinois Bell Telephone		5 – 1956	
Illinois Central		4 – 1955	
Illinois Central		5 – 1955	
Illinois Central		4¾ – 1966	
Illinois Central		5 – 1963	
Illinois Central		4½ – 1963	
Illinois Central		4 – 1953	
Illinois Power & Light		5½ – 1957	
Illinois Power & Light		5½ – 1954	
Illinois Steel		4½ – 1940	
Indianapolis Power & Light		5 – 1957	
Inland Steel		4½ – 1978	
Interboro Rapid Transit		5 – 1966	
International Great Northern		6 – 1952	
International Great Northern	C–	5 – 1956	
International Mercantile Marine		6 – 1941	
International Paper		5 – 1947	
International Securities of America		5 – 1947	
International Telephone & Telegraph		4½ – 1952	
Interstate Power		5 – 1957	
Interstate Power		6 – 1952	
Investments Company of America		5 – 1947	(XW)
Iowa-Nebraska Light & Power		5 – 1957	
Kansas City Southern		5 – 1950	
Kansas City Southern		3 – 1950	
Kansas City Terminal		4 – 1960	
Keith (B. F.) Corporation		6 – 1946	
Kings County Elevated Railroad	(gtd.)	4 – 1949	

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

Koppers Gas & Coke		5	– 1947	
Laclede Gas Light		5½	– 1953	
Lake Shore & Michigan Southern		3½	– 1997	
Lehigh Power Securities		6	– 2026	
Lehigh Valley Railroad		4½	– 2003	
Lehigh Valley Railroad		4	– 2003	
Libby, McNeil & Libby		5	– 1942	
Liggett & Myers		7	– 1944	
Liggett & Myers		5	– 1951	
Loew's		6	– 1941	(XW)
Long Island Railroad	Ref.	4	– 1949	
Lorillard (P.) Company		7	– 1944	
Lorillard (P.) Company		5	– 1951	
Louisiana Power & Light		5	– 1957	
Louisville & Nashville		4	– 1940	
Louisville Gas & Electric		5	– 1952	
McCrory Stores		5½	– 1941	
Manhattan Railway of New York		4	– 1990	
Market Street Railway		7	– 1940	
Massachusetts Gas		5½	– 1946	
Metropolitan Edison		4½	– 1968	
Michigan Central		3½	– 1952	
Milwaukee Electric, Railway & Light		5	– 1961	
Milwaukee Gas Light		4½	– 1967	
Minnesota Power & Light		4½	– 1978	
Missouri-Kansas-Texas Railway		4	– 1990	
Missouri-Kansas-Texas Railway		5	– 1962	
Missouri-Kansas-Texas Railway		4	– 1962	
Missouri Pacific		5	– 1965	
Missouri Pacific		5	– 1977	
Missouri Pacific		5	– 1978	
Missouri Pacific		4	– 1975	
Montana Power		5	– 1943	
Montana Power		5	– 1962	
Narragansett Electric	A–	5	– 1957	
Nassau Electric Railroad		4	– 1951	
National Dairy Products		5¼	– 1948	
National Power & Light		6	– 2026	
National Public Service		5	– 1978	
Nebraska Power		6	– 2022	
New England Telephone & Telegraph		5	– 1952	
New England Telephone & Telegraph		4½	– 1961	

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

New Orleans Public Service	5	– 1952
New Orleans Public Service	5	– 1955
New Orleans, Texas & Mexico	5½	– 1954
New Orleans, Texas & Mexico	5	– 1954
New York Central	4	– 1998
New York Central & Hudson	3½	– 1997
New York Central & Hudson	4½	– 2013
New York Central & Hudson	5	– 2013
New York Central & Hudson (Lake Shore)	3½	– 1998
New York, Chicago & St. Louis	4½	– 1978
New York Edison	6½	– 1941
New York Edison	5	– 1944
New York Gas & Electric Light, Heat & Power.	5	– 1948
New York Gas & Electric Light, Heat & Power.	4	– 1949
New York, New Haven & Hartford	4	– 1955
New York, New Haven & Hartford	4	– 1956
New York, New Haven & Hartford	6	– 1940
New York, New Haven & Hartford	4½	– 1967
New York, Ontario & Western	4	– 1992
New York Power & Light	4½	– 1967
New York Railways Corporation	6	– 1965
New York Steam	6	– 1947
New York, Susquehanna & Western	5	– 1940
New York Trap Rock	6	– 1946
New York, Westchester & Boston	4½	– 1946
Niagara Falls Power	6	– 1950
Niagara, Lockport & Ontario Power	5	– 1955
Norfolk & Western	4	– 1996
Norfolk & Western	4	– 1944
Norfolk & Western	4	– 1941
Norfolk & Southern	5	– 1961
North American Edison	5	– 1957
North American Edison	5½	– 1963
Northern Indiana Public Service	5	– 1966
Northern Pacific	4	– 1997
Northern Pacific	3	– 2047
Northern Pacific	4½	– 2047
Northern Pacific	6	– 2047
Northern Pacific C–	5	– 2047
Northern Pacific D–	5	– 2047
Northern States Power	5	– 1941
Northern States Power	6	– 1941

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

Ohio Power	5	– 1952	
Ohio Power	4½	– 1956	
Ohio Public Service	7½	– 1946	
Ohio Public Service	7	– 1947	
Oregon-Washington Railroad & Navigation	4	– 1961	
Otis Steel	6	– 1941	
Pacific Gas & Electric	5	– 1942	
Pacific Gas & Electric	4½	– 1957	
Pacific Investing	5	– 1948	
Pacific Telephone and Telegraph	5	– 1952	
Paramount Broadway	5½	– 1951	
Paramount-Famous-Lasky	6	– 1947	
Park & Lexington	6½	– 1953	
Penn-Ohio Edison	6	– 1950	(XW)
Penn-Ohio Edison	5½	– 1959	
Pennsylvania Company	4¾	– 1963	
Pennsylvania, Ohio & Detroit	4½	– 1977	
Pennsylvania Railroad	5	– 1964	
Pennsylvania Railroad	4½	– 1960	
Pennsylvania Railroad	4½	– 1965	
Pennsylvania Railroad	5	– 1968	
Peoples Gas Light & Coke	5	– 1947	
Pere Marquette	5	– 1956	
Philadelphia & Reading Coal & Iron	5	– 1973	
Philadelphia Company	5	– 1967	
Philadelphia Electric	4½	– 1967	
Philadelphia Electric Power	5½	– 1972	
Pillsbury Flour Mills	6	– 1943	
Pittsburgh, Cincinnati, Chicago & St. Louis.... Gen. A–	5	– 1970	
Pittsburgh, Cincinnati, Chicago & St. Louis.... Gen. A–	5	– 1975	
Pittsburgh Coal	6	– 1949	
Pittsburgh Steel	6	– 1948	
Postal Telegraph & Cable	5	– 1953	
Potomac Edison	5	– 1956	
Power Corporation of New York	5½	– 1947	
Public Service Electric & Gas	4½	– 1967	
Purity Bakeries	5	– 1948	
Reading Company ....A–	4½	– 1997	
Republic Iron & Steel	5½	– 1953	
St. Louis Gas & Coke	6	– 1947	
St. Louis-San Francisco	4	– 1950	
St. Louis-San Francisco	5	– 1950	

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

St. Louis-San Francisco		4½ – 1978	
St. Louis Southwestern		5 – 1952	
St. Paul & Kansas City Short Line		4½ – 1941	
St. Paul Union Depot		5 – 1972	
San Antonio & Aransas Pass		4 – 1943	
San Antonio Public Service		5 – 1958	
San Antonio Public Service		6 – 1952	
Schulco	(gtd.) B–	6½ – 1946	
Scripps (E.W.)		5½ – 1943	
Seaboard Air Line		6 – 1945	
Servel		5 – 1948	
Sharon Steel Hoop		5½ – 1948	
Shell Pipe Line		5 – 1952	
Shell Union		5 – 1947	
Sierra & San Francisco Power		5 – 1949	
Southeastern Power & Light		6 – 2025	(XW)
Southern Bell Telephone		5 – 1941	
Southern California Edison		5 – 1951	
Southern California Edison		5 – 1952	
Southern Colorado Power		6 – 1947	
Southern Pacific		4½ – 1968	
Southern Pacific		4 – 1949	
Southern Pacific		4 – 1950	
Southwestern Gas & Electric	A–	5 – 1957	
Southwestern Power & Light		6 – 2022	
Staley (A. E.) Manufacturing		6 – 1942	
Standard Power & Light		6 – 1957	
Stevens Hotel		6 – 1945	
Tennessee Electric Power		6 – 1947	
Terminal Railroad Association of St. Louis		4 – 1953	
Texarkana & Fort Smith		5½ – 1950	
Texas & Pacific		5 – 1979	
Texas Cities Gas		5 – 1948	
Texas Power & Light		5 – 1956	
Third Avenue Railway		4 – 1960	
Trumbull Steel		6 – 1940	
Union Electric Light & Power (Illinois)		5½ – 2054	
Union Oil of California		6 – 1942	
Union Pacific		4 – 1947	
Union Pacific		4 – 2008	
Union Pacific		4½ – 1967	
Union Pacific		4 – 1968	

THE 363 BONDS OF THE TESTING GROUP (*Cont'd*)

United Biscuit	6	– 1942
United Drug	5	– 1953
United Light & Railways (Maine)	6	– 1952
United Light & Railways (Delaware)	5½	– 1952
United States Rubber	5	– 1947
Utah Light & Traction	5	– 1944
Utah Power & Light	5	– 1944
Utilities Power & Light	5½	– 1947
Virginian Railway	5	– 1962
Wabash Railway	5½	– 1975
Wabash Railway	5	– 1976
Wabash Railway	4½	– 1978
West Pennsylvania Power	5	– 1946
West Pennsylvania Power	5	– 1956
West Shore Railroad	4	– 2361
West Texas Utilities	5	– 1957
Western Electric	5	– 1944
Western Maryland Railroad	4	– 1952
Western Maryland Railroad	5½	– 1977
Western Pacific	5	– 1946
Western Union Telegraph	4½	– 1950
Western Union Telegraph	5	– 1951
Wheeling Steel	5½	– 1948
Wheeling Steel	4½	– 1953
Wilson & Company	6	– 1941
Wisconsin Central	4	– 1949
Youngstown Sheet & Tube	5	– 1978

APPENDIX B

Average Yields by Ratings, July 15, 1929

Published

		Rail-roads	Utilities	Industrials	This Study All
Fitch*	A+.....	4.79	4.85	5.02	4.90
	A.....	5.12	5.15	5.45	5.25
	A−.....	5.56	5.45	5.97	5.64
	B+.....	5.88	6.20	6.88	6.43
	B.....	6.64	6.89	7.52	7.44
	B−.....	7.27	7.67	8.50	7.54
Moody	A+.....	4.72	4.82	4.75	4.81
	A.....	4.96	4.98	5.01	5.02
	A−.....	5.31	5.42	5.52	5.44
	B+.....	5.96	5.82	5.98	6.16
Standard†	A+.....	4.83	4.79	4.93‡	4.85
	A.....	4.97	4.99	5.54‡	5.03
	A−.....	5.36	5.33	5.90‡	5.48
	B+.....	5.84	5.90	6.41‡	6.17
	B.....	6.58	6.54	6.87‡	6.63
	B−.....	7.85	7.25	7.57‡	7.26

* Long-term (maturities over five years), listed issues only.
† As of about July 20, 1929.
‡ Include real estate bonds.

Sources:

Fitch: *The Fitch Bond Record*, No. 1147, July 16, 1929, inside rear cover.
Moody: Moody's *Weekly Bond Letter*, No. 29, July 22, 1929, p. B-57.
Standard: *Standard Bond Investments*, Industries Sections, August, 1929, p. 1.

AVERAGE YIELDS BY RATINGS, JULY 18, 1932

Published

		Rail-roads	Utilities	Industrials	All	This Study All
Fitch	A+.....	5.23	5.17	5.21	–	5.04
	A.....	5.84	5.66	5.99	–	6.13
	A−.....	6.89	6.65	6.96	–	7.69
	B+.....	8.19	8.13	8.33	–	8.78
	B.....	9.64	9.39	10.01	–	12.32
	B−.....	11.10	10.89	11.29	–	16.70
Moody	A+.....	5.73	4.76	5.23	5.24	5.53
	A.....	7.23	5.71	6.56	6.50	6.72
	A−.....	10.05	7.26	7.44	8.25	8.66
	B+.....	12.11	9.99	10.57	10.89	11.59
Standard	A+.....	5.65	4.94	5.74	5.41	5.45
	A.....	6.46	5.59	6.52	5.94	6.55
	A−.....	7.40	6.88	6.69	7.01	8.18
	B+.....	7.93	8.04	8.47	8.13	12.13
	B.....	*	9.09	8.66	8.86	15.46
	B−.....	*	*	9.03	9.03	19.18

* Not given.

SOURCES:

Fitch: *The Fitch Bond Record,* No. 1304, July 19, 1932, inside front cover.
Moody: Moody's *Bond Section,* Vol. 24, No. 59, July 25, 1932, p. 1329.
Standard: *Standard Bond Investments,* Bond Values edition, Vol. 2, No. 42, Part 2 (July 2, 1932), front cover.

APPENDIX C

ISSUES REMOVED FROM AND SUBSTITUTED IN MOODY'S AVERAGE YIELDS BY RATINGS, JULY 20, 1931 TO JULY 18, 1932

Aaa (*Removed*)

Company	Issue	Yield
JUNE 1, 1931		
Philadelphia Electric	4½ – 1967	4.2
Public Service Electric & Gas	4½ – 1967	4.2
SEPTEMBER 8, 1931		
New York Central	4½ – 2013	4.9
Reading	4½ – 1997	4.6
OCTOBER 19, 1931		
Consolidated Gas, Electric Light & Power of Baltimore	4½ – 1970	4.4
Duquesne Light	4½ – 1967	4.5
Bush Terminal	4 – 1952	5.2
FEBRUARY 23, 1932		
Canadian Pacific	4 – Perpetual	6.6
Chicago, Rock Island & Pacific	4 – 1988	5.7
Southern	5 – 1994	6.0
Gulf Oil	5 – 1947	5.5
Royal Dutch	4 – 1945	7.2
Union Gulf	5 – 1950	5.5
JULY 11, 1932		
Northern Pacific	3 – 2047	5.3
Commonwealth Edison	4½ – 1957	6.4
Baldwin Locomotive	5 – 1940	6.5
Lehigh Coal & Navigation ....A–	4½ – 1954	5.8
	Mean	5.4
	Median	5.3

Aaa (*Substituted*)

Company	Issue	Yield
JUNE 1, 1931		
Philadelphia Electric	4 – 1971	4.1
Public Service Electric & Gas	4 – 1971	4.1
SEPTEMBER 8, 1931		
Chesapeake & Ohio	4½ – 1992	4.3
Norfolk & Western	*4 – 1996	4.0
OCTOBER 19, 1931		
Consolidated Gas, Electric Light & Power of Baltimore	4 – 1981	4.6
West Penn Power	4 – 1961	4.5
Gulf Oil	5 – 1947	5.3
FEBRUARY 23, 1932		
Atlantic Coast Line	4 – 1952	5.8
Chicago, Burlington & Quincy	4 – 1958	5.1
New York Central	3½ – 1997	4.9
Standard Oil of New Jersey	5 – 1946	5.0
Tennessee Coal, Iron & Railroad	5 – 1951	4.9
Western Electric	5 – 1944	5.4
JULY 11, 1932		
Southern Pacific S. F. Terminal	4 – 1950	8.8
Consumer's Power	4½ – 1958	5.1
General Petroleum	5 – 1946	5.0
Union Gulf	6 – 1950	6.4
	Mean	5.1
	Median	4.9

* Erroneously reported as 4½—1996.

Aa (*Removed*)

Company	Issue	Yield
JUNE 1, 1931		
Illinois Central	4¾ – 1966	6.8
Pere Marquette	4 – 1956	5.0
Alabama Power	4½ – 1967	4.6
Milwaukee Electric, Railway & Light	5 – 1961	4.8
Niagara, Lockport & Ontario Power	5 – 1955	4.6
Youngstown Sheet & Tube	5 – 1978	5.1
JULY 27, 1931		
Southern Railway	4 – 1956	5.5
SEPTEMBER 8, 1931		
Missouri-Kansas-Texas	4½ – 1978	5.1
Utica Gas & Electric	5 – 1957	4.2
OCTOBER 19, 1931		
Bush Terminal Buildings	5 – 1960	5.7
Sanda Falls	5 – 1955	5.0
Youngstown Sheet & Tube	5 – 1978	6.3
FEBRUARY 23, 1932		
Great Northern	4½ – 1976	6.7
New York Central	4½ – 2013	6.5
San Antonio & Aransas Pass	4 – 1943	6.8
Southern Pacific	4½ – 1968	7.0
Lackawanna Steel	5 – 1950	5.9
JULY 11, 1932		
Northern Pacific	4½ – 2047	10.0
Aluminum Company of America	5 – 1952	6.6
American Smelting and Refining	5 – 1947	7.5
Bethlehem Steel	5 – 1942	9.2
Bush Terminal	4 – 1952	8.7
Crane Company	5 – 1940	15.4
Cudahy Packing	5 – 1946	5.5
Inland Steel	4½ – 1978	7.2
Texas Corporation	5 – 1944	8.1
Union Oil of California	6 – 1942	6.7
Metropolitan Edison	4½ – 1968	6.0
	Mean	6.7
	Median	6.4

Aa (*Substituted*)

Company	Issue	Yield
JUNE 1, 1931		
Erie	4 – 1996	4.9
Chesapeake & Ohio	4½ – 1993	4.5
Kansas Gas & Electric	4½ – 1980	4.6
Northern States Power	4½ – 1961	4.6
Louisville Gas & Electric	5 – 1952	4.5
Crane Company	5 – 1940	4.7
JULY 27, 1931		
Northern Pacific	4½ – 2047	4.8
SEPTEMBER 8, 1931		
New York Central	4½ – 2013	4.9
Pennsylvania Water & Power	4½ – 1968	4.4
OCTOBER 19, 1931		
American Smelting & Refining	5 – 1947	5.2
Bush Terminal	4 – 1952	5.2
Crane Company	5 – 1940	5.4
FEBRUARY 23, 1932		
Atlantic Coast Line	4½ – 1964	6.3
Chicago, Rock Island & Pacific	4 – 1988	5.7
Southern Pacific	4 – 1955	5.7
Southern Pacific-Oregon Short Line	4½ – 1977	5.7
Swift & Company	5 – 1944	5.1
JULY 11, 1932		
Northern Pacific	3 – 2047	5.3
Atlantic Refining	5 – 1937	6.4
Baldwin Locomotive	5 – 1949	6.5
Gulf Oil of Pennsylvania	5 – 1947	6.0
Humble Oil and Refining	5 – 1937	5.0
Jones and Laughlin Steel	5 – 1939	6.1
S. S. Kresge Company	5 – 1945	6.4
Lehigh Coal & Navigation A–	4½ – 1954	5.8
Sanda Falls	5 – 1955	5.5
Sinclair Crude Oil	5½ – 1938	5.3
Southern California Edison	5 – 1951	5.3
	Mean	5.4
	Median	5.3

A (*Removed*)

Company	Issue	Yield
JUNE 1, 1931		
St. Louis-San Francisco	4½ – 1978	11.3
Wabash Railway	4½ – 1978	8.0
Colorado Fuel & Iron	5 – 1943	6.2
SEPTEMBER 8, 1931		
Chicago, Terre Haute & Southern	5 – 1960	8.8
OCTOBER 19, 1931		
International Match	5 – 1947	9.7
Armour & Company	4½ – 1939	9.8
Chile Copper	5 – 1947	9.5
Colorado Fuel & Iron	5 – 1943	8.4
Fairbanks, Morse & Company	5 – 1942	8.0
New York Dock	4 – 1951	7.3
Shell Pipe Line	5 – 1952	6.5
Wheeling Steel	4½ – 1953	9.4
Baltimore & Ohio	5 – 2000	6.0
Chicago & Alton	3 – 1949	7.7
Chicago, Rock Island & Pacific	4½ – 1952	7.7
Kanas City Southern	5 – 1950	7.7
Missouri-Kansas-Texas	4½ – 1978	6.7
Missouri Pacific	5 – 1965	7.8
JULY 11, 1932		
Central New England	4 – 1961	8.3
Cleveland, Cincinnati, Chicago & St. Louis	4½ – 1977	12.7
Lehigh Valley	4 – 2003	12.9
Missouri-Kansas-Texas	4 – 1962	12.0
New York Central	4½ – 2013	12.8
New York, New Haven & Hartford	4½ – 1967	9.0
Southern Pacific	4½ – 1981	14.8
Texas & Pacific	5 – 1977	14.3
Abraham & Straus	5½ – 1943	9.9
Bush Terminal Building	5 – 1960	10.8
Paramount Broadway	5½ – 1951	16.1
Sun Pipe Line	5 – 1940	8.3
Swift & Company	5 – 1940	7.9
United Drug	5 – 1953	8.5
Youngstown Sheet & Tube	5 – 1978	9.1
Utah Power & Light	5 – 1944	10.4
	Mean	9.5
	Median	8.9

A (*Substituted*)

Company	Issue	Yield
JUNE 1, 1931		
Rio Grande Western	4 – 1949	5.4
Chicago & Alton Railroad Company	3 – 1949	5.8
Youngstown Sheet & Tube	5 – 1978	5.1
SEPTEMBER 8, 1931		
Missouri-Kansas-Texas	4½ – 1978	5.1
OCTOBER 19, 1931		
Abraham & Straus	5½ – 1943	6.5
Bush Terminal Buildings	5 – 1960	5.7
Lorillard	7 – 1944	6.2
Paramount Broadway	5½ – 1951	5.8
Sinclair Pipe Line	5 – 1942	5.6
Sun Pipe Line	5 – 1940	5.4
Swift & Company	5 – 1940	5.5
Youngstown Sheet & Tube	5 – 1978	6.3
Cleveland, Cincinnati, Chicago & St. Louis	4½ – 1977	5.8
Great Northern	4½ – 1976	6.0
Lehigh Valley	4 – 2003	5.8
Missouri-Kansas-Texas	4 – 1962	6.7
New York Central	4½ – 2013	5.6
Southern Pacific	4½ – 1981	6.0
JULY 11, 1932		
Atlantic Coast Line —L & N	4 – 1952	14.8
Cleveland, Cincinnati, Chicago & St. Louis	4 – 1993	6.3
Illinois Central	4 – 1953	15.1
Louisville & Nashville	4½ – 2003	9.4
Morris & Essex	4½ – 1955	7.0
Northern Pacific	4½ – 2047	10.0
Pennsylvania	4½ – 1970	11.0
Reading ....A–	4½ – 1997	6.7
Aluminum Company of America	5 – 1952	6.6
American Smelting & Refining	5 – 1947	7.5
Cudahy Packing	5 – 1946	5.5
Inland Steel	4½ – 1978	7.2
Sun Oil	5½ – 1939	6.9
Texas Corporation	5 – 1944	8.1
Tobacco Products	6½ – 2022	7.5
Houston Lighting & Power	4½ – 1981	5.7
	Mean	7.0
	Median	6.3

Baa (*Removed*)

Company	Issue	Yield
JUNE 1, 1931		
Power Corporation of New York	5½ – 1947	6.2
Phillips Petroleum	5¼ – 1939	13.9
JULY 27, 1931		
Southern California Gas	5 – 1937	5.9
SEPTEMBER 8, 1931		
Alleghany Corporation	5 – 1944	10.4
Chicago, Milwaukee, St. Paul & Pacific	5 – 1975	11.8
Tennessee Central Railway	6 – 1947	8.3
Central States Power & Light	5½ – 1953	9.0
OCTOBER 19, 1931		
Electric Power & Light	5 – 2030	8.3
Abitibi Power & Paper	5 – 1953	14.4
Childs Company	5 – 1943	11.6
Phillips Petroleum	5¼ – 1939	17.2
FEBRUARY 23, 1932		
Baltimore & Ohio	4½ – 1960	9.1
Chicago, Terre Haute & Southern	5 – 1960	13.0
Chicago, Rock Island & Pacific	4½ – 1960	11.3
Denver, Rio Grande Western	5 – 1978	12.1
Missouri Pacific	4 – 1975	11.6
American Rolling Mills	5 – 1948	11.1
Crown Cork & Seal	6 – 1947	8.3
McCrory Stores	5½ – 1941	9.0
Paramount Publix	5½ – 1950	12.6
Baltimore & Ohio	5 – 2000	16.7
Chicago & Northwestern .....C–	4½ – 2037	26.5
Erie	5 – 1967	34.5
Missouri-Kansas-Texas	5 – 1967	23.8
Missouri Pacific	5 – 1977	21.6
New York, New Haven & Hartford ...	4 – 1957	9.1
Standard Power & Light	6 – 1957	18.5
United Light & Railways (Delaware)	5½ – 1952	16.7
West Texas Utilities	5 – 1957	17.3
Cudahy Packing	5½ – 1937	12.0
International Cement	5 – 1948	12.9
Loew's	6 – 1941	11.3
Pure Oil	5½ – 1940	14.4
	Mean	13.6
	Median	12.6

Baa (*Substituted*)

Company	Issue	Yield
JUNE 1, 1931		
West Texas Utilities	5 – 1957	5.9
McCrory Stores	5½ – 1941	5.7
JULY 27, 1931		
Florida Power & Light	5 – 1954	5.9
SEPTEMBER 8, 1931		
Baltimore & Ohio	4½ – 1960	6.6
Chicago, Rock Island & Pacific	4½ – 1960	7.9
Missouri-Kansas-Texas	5 – 1967	8.0
Nevada California Electric	5 – 1956	6.0
OCTOBER 19, 1931		
Southeastern Power & Light	6 – 2025	7.3
Goodyear Tire & Rubber	5 – 1957	6.5
McCrory Stores	5½ – 1941	6.7
National Steel	5 – 1956	7.2
FEBRUARY 23, 1932		
Baltimore & Ohio	5 – 2000	7.7
Boston & Maine	5 – 1967	6.9
Chicago & Northwestern C–	4½ – 2037	10.9
Chicago, Rock Island & Pacific	4½ – 1952	9.5
Missouri Pacific	5 – 1977	9.4
Cudahy Packing	5½ – 1937	9.1
International Cement	5 – 1948	9.7
Loew's	6 – 1941	8.1
Lorillard	5 – 1951	5.9
JULY 11, 1932		
Erie	4 – 1996	6.3
Lehigh Valley	4 – 2003	12.9
Missouri-Kansas-Texas	5 – 1962	11.9
New York Central	4½ – 2013 (new)	12.9
New York, New Haven & Hartford	4½ – 1967	9.0
Southern Pacific	4½ – 1981	14.8
American Power & Light	6 – 2016	14.4
Iowa-Nebraska Light & Power B–	5 – 1961	7.8
New Orleans Public Service	5 – 1955	9.5
Abraham & Straus	5½ – 1943	9.9
Pillsbury Flour Mills	6 – 1943	7.0
St. Joseph Lead	5½ – 1941	11.6
Sinclair Oil B–	6½ – 1938	11.2
	Mean	8.8
	Median	8.0

APPENDIX D

Examples of Nine Types of Market Action of Bonds Six Weeks before and Six Weeks after Rating Change Downward

Type in Chart 4	Issue	Fitch Rating Change	Market Prices *					
			Six Weeks Before			Six Weeks After		
1	United States Rubber 5s–1947	Nov. 11, 1930 A– to B+	70 69½	69⅛ 69¼	70 70¼	71⅝ 71⅝	72 70½	69½ 70⅝
2	Western Union Telegraph 5s–1951	June 30, 1931 A+ to A–	101½ 100¼	100¾ 101¾	101⅛ 101⅞	102⅜ 105½	103¼ 104⅝	104 104¾
3	Armour (Delaware) 5½s–1943	Apr. 21, 1931 B+ to B	70 71	70⅛ 68	68⅝ 70¼	72⅞ 70⅞	70¾ 69	65 65
4	Texas and Pacific 5s–1979	Jan. 13, 1931 A to A–	94¾ 96	97½ 99	98¾ 98	99 97¾	99¼ 98	98½ 98⅞
5	Trumbull Steel 6s–1940	Jan. 20, 1931 A– to B+	89 88¾	89 94¼	94½ 97¾	97 97	98 100	99 98⅞
6	American Water Works and Electric 6s–1975	Apr. 21, 1931 A– to B+	104⅝ 106	106½ 106⅜	106¼ 106⅛	105¼ 105¼	103⅛ 104½	105 103⅝
7	Consolidation Coal 5s–1950	Dec. 16, 1930 B to C+	30 33	33 31	28½ 26	26¼ 26½	26⅜ 25¼	25 26⅞
8	International Mercantile Marine 6s–1941	Dec. 23, 1930 A to A–	100½ 100⅜	100⅜ 99½	94¼ 92	92 97	95 96	95 95⅝
9	Postal Telegraph and Cable 5s–1953	Nov. 18, 1930 A– to B+	81 81½	80¼ 79	77⅞ 71	62½ 65	64 57	53¼ 57

* Market prices read in the following sequence: 1 3 5
2 4 6

Bid prices used where no sales prices were available.

EXAMPLES OF NINE TYPES OF MARKET ACTION OF BONDS SIX WEEKS BEFORE AND SIX WEEKS AFTER RATING CHANGE UPWARD

TYPE IN CHART 5	ISSUE	FITCH RATING CHANGE	MARKET PRICES *					
			Six Weeks Before			Six Weeks After		
1	Inland Steel 4½s–1978	Aug. 13, 1929 A to A+	90⅞ 90¾	90 90	89¾ 90½	90¾ 91	91 90½	91 90¾
2	Union Electric Light and Power (Ill.) 5½s–1954	July 19, 1932 A to A+	99¾ 99¾	100 100¼	100¼ 100¼	100 100¼	101 102½	103 102½
3	Certain-teed Products 5½s–1948	Apr. 15, 1930 C+ to B−	51 58	57⅛ 54	52 51⅛	50 51½	51⅜ 49¾	46 46⅝
4	Pillsbury Flour Mills 6s–1943	Sept. 13, 1932 B+ to A−	97½ 98½	99½ 98½	100 99½	99½ 99½	99 99½	99½ 100
5	Kings County Elevated (gtd.) 4s–1949	Dec. 27, 1932 B+ to A−	72½ 71¼	71½ 71	73⅛ 73⅝	74½ 77½	73½ 75½	76¾ 76⅛
6	Schulco (gtd.)–B–6½s–1946	Aug. 23, 1932 C+ to B−	29½ 29½	26½ 30⅜	34 35½	35½ 33	35 25⅛	25½ 25⅛
7	Northern Pacific C–5s–2047	Aug. 13, 1929 A to A+	103 102⅜	102¼ 101⅝	101¼ 101	102½ 102½	102⅛ 101¼	102½ 101⅞
8	Northern Pacific 4½s–2047	Aug. 13, 1929 A to A+	96 95	94½ 93½	92⅞ 90	91½ 92⅜	92⅜ 92⅝	93½ 92¼
9	Denver and Rio Grande Western 5s–1955	May 13, 1930 B− to B	97 96¾	96⅝ 95	93½ 94	96½ 97¼	97 95¾	93 89⅛

* Market prices read in the following sequence: 1 3 5 / 2 4 6

Bid prices used where no sales prices were available.

APPENDIX E

Investing in Yields by Ratings: Testing Lists

Moody's Ratings

Equal-Rating Exchanges:				Yield to Maturity
		A+		
A+	Baldwin Locomotive	5s	– 1940	4.23
A+	Chicago Union Station	6½s	– 1963	5.65
A+	Norfolk & Western	4s	– 1996	4.38
A+	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
A+	Atchison, Topeka & Santa Fe..Gen.	4s	– 1995	4.45
A+	Liggett & Myers	7s	– 1944	5.51
A+	Pennsylvania Railroad	4½s	– 1960	4.52
A+	New York Edison	6½s	– 1941	5.23
		A		
A	Northern Pacific	4½s	– 2047	4.71
A	Wisconsin Central	4s	– 1949	5.84
A	Metropolitan Edison	4½s	– 1968	4.75
A	Niagara Falls Power	6s	– 1950	5.64
A	Southern Pacific	4s	– 1949	4.81
A	Kings County Elevated .....(gtd.)	4s	– 1949	5.61
A	Great Northern	4½s	– 1976	4.83
A	Northern Pacific	6s	– 2047	5.45
		A–		
A–	Erie .....P. L.	4s	– 1996	4.84
A–	Manhattan Railway of New York .	4s	– 1990	6.99
A–	Alabama Power	4½s	– 1967	4.91
A–	Framerican Industrial Development	7½s	– 1942	6.96
A–	Missouri-Kansas-Texas	5s	– 1962	4.94
A–	P. Lorillard	7s	– 1944	6.25
A–	Southern California Edison	5s	– 1952	4.95
A–	New York, Ontario & Western....	4s	– 1992	6.22

EQUAL-RATING EXCHANGES:				Yield to Maturity
		B+		
B+	Boston & Maine	5s	– 1967	5.32
B+	Interboro Rapid Transit	5s	– 1966	8.48
B+	Erie ....G.L.	4s	– 1996	5.32
B+	Third Avenue Railway	4s	– 1960	7.80
B+	American Rolling Mills	5s	– 1948	5.36
B+	Florida East Coast	5s	– 1974	7.70
B+	Erie	5s	– 1967	5.42
B+	Francisco Sugar	7½s	– 1942	7.53
ONE-RATING-HIGHER EXCHANGES:				
		A to A+		
A	Northern Pacific	4½s	– 2047	4.71
A+	Chicago Union Station	6½s	– 1963	5.65
A	Metropolitan Edison	4½s	– 1968	4.75
A+	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
A	Southern Pacific	4s	– 1949	4.81
A+	Liggett & Myers	7s	– 1944	5.51
A	Great Northern	4½s	– 1976	4.83
A+	New York Edison	6½s	– 1941	5.23
		A– to A		
A–	Erie ....P.L.	4s	– 1996	4.84
A	Wisconsin Central	4s	– 1949	5.84
A–	Alabama Power	4½s	– 1967	4.91
A	Niagara Falls Power	6s	– 1950	5.64
A–	Missouri-Kansas-Texas	5s	– 1962	4.94
A	King's County Elevated ....(gtd.)	4s	– 1949	5.61
A–	Southern California Edison	5s	– 1952	4.95
A	Northern Pacific	6s	– 2047	5.45

				Yield to Maturity
ONE-RATING-HIGHER EXCHANGES:				
	B+ to A−			
B+	Boston & Maine	5s	– 1967	5.32
A−	Manhattan Railway of New York	4s	– 1990	6.99
B+	Erie	4s	– 1996	5.32
A−	Framerican Industrial Development	7½s	– 1942	6.96
B+	American Rolling Mills	5s	– 1948	5.36
A−	P. Lorillard	7s	– 1944	6.25
B+	Erie	5s	– 1967	5.42
A−	New York, Ontario & Western	4s	– 1992	6.22
	B to B+			
B	Denver & Rio Grande Western	5s	– 1955	5.29
B+	Interboro Rapid Transit	5s	– 1956	8.48
B	Pittsburgh Coal	6s	– 1949	6.08
B+	Third Avenue Railway	4s	– 1960	7.80
B	A. E. Staley Manufacturing	6s	– 1942	6.19
B+	Florida East Coast	5s	– 1974	7.70
B	Standard Power & Light	6s	– 1957	6.21
B+	Francisco Sugar	7½s	– 1942	7.53
TWO-RATINGS-HIGHER EXCHANGES:				
	A− to A+			
A−	Erie ....P. L.	4s	– 1996	4.84
A+	Chicago Union Station	6½s	– 1963	5.65
A−	Alabama Power	4½s	– 1967	4.91
A+	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
A−	Missouri-Kansas-Texas	5s	– 1962	4.94
A+	Liggett & Myers	7s	– 1944	5.51
A−	Southern California Edison	5s	– 1952	4.95
A+	New York Edison	6½s	– 1941	5.23
	B+ to A			
B+	Boston & Maine	5s	– 1967	5.32
A	Wisconsin Central	4s	– 1949	5.84
B+	Erie ....G.L.	4s	– 1996	5.32
A	Niagara Falls Power	6s	– 1950	5.64
B+	American Rolling Mills	5s	– 1948	5.36
A	King's County Elevated ....(gtd.)	4s	– 1949	5.61
B+	Erie	5s	– 1967	5.42
A	Northern Pacific	6s	– 2047	5.45

				Yield to Maturity
TWO-RATINGS-HIGHER EXCHANGES:				
	B to A−			
B	Denver & Rio Grande Western....	5s	– 1955	5.29
A−	Manhattan Railway of New York	4s	– 1990	6.99
B	Pittsburgh Coal	6s	– 1949	6.08
A−	Framerican Industrial Development	7½s	– 1942	6.96
B	A. E. Staley Manufacturing	6s	– 1942	6.19
A−	P. Lorillard	7s	– 1944	6.25
B	Standard Power & Light	6s	– 1957	6.21
A−	New York, Ontario & Western	4s	– 1992	6.22
	B− to B+			
B−	St. Louis Gas & Coke	6s	– 1947	7.65
B+	Interboro Rapid Transit	5s	– 1966	8.48
THREE-RATINGS-HIGHER EXCHANGES:				
	B+ to A+			
B+	Boston & Maine	5s	– 1967	5.32
A+	Chicago Union Station	6½s	– 1963	5.65
B+	Erie .....G.L.	4s	– 1996	5.32
A+	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
B+	American Rolling Mills	5s	– 1948	5.36
A+	Liggett & Myers	7s	– 1994	5.51
	B to A			
B	Denver & Rio Grande Western ...	5s	– 1955	5.29
A	Wisconsin Central	4s	– 1949	5.84
FIVE-RATINGS-HIGHER EXCHANGE:				
	B to A+			
B	Denver & Rio Grande Western	5s	– 1967	5.29
A+	Chicago Union Station	6½s	– 1963	5.84

PESSIMISTIC RATINGS

EQUAL-RATING EXCHANGES:				Yield to Maturity
		A+		
A+	Baldwin Locomotive	5s	– 1940	4.23
A+	Chicago Union Station	6½s	– 1963	5.65
A+	Norfolk & Western	4s	– 1996	4.38
A+	Liggett & Myers	7s	– 1944	5.51
A+	Atchison, Topeka & Santa Fe Gen.	4s	– 1995	4.45
A+	Liggett & Myers	5s	– 1951	5.15
A+	Pennsylvania Railroad	4½s	– 1960	4.52
A+	Illinois Central	4s	– 1953	5.10
		A		
A	New York Central	4s	– 1998	4.60
A	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
A	Duquesne Light	4½s	– 1967	4.64
A	Northern Pacific	6s	– 2047	5.45
A	New York Gas, Electric Light, Heat & Power	5s	– 1948	4.67
A	Union Electric Light & Power	5½s	– 1954	5.43
A	New York Gas, Electric Light, Heat & Power	4s	– 1949	4.67
A	New York Edison	6½s	– 1941	5.23
		A–		
A–	Public Service Electric & Gas	4½s	– 1967	4.71
A–	P. Lorillard	7s	– 1944	6.25
A–	Metropolitan Edison	4½s	– 1968	4.75
A–	Brooklyn Union Elevated 1st	5s	– 1950	6.21
A–	Illinois Central	4¾s	– 1966	4.83
A–	Ohio Public Service	7s	– 1947	5.99
A–	Chicago & North Western	4½s	– 2037	4.84
A–	Firestone Cotton Mills	5s	– 1948	5.90
		B+		
B+	Wabash Railway	4½s	– 1978	4.96
B+	Manhattan Railway of New York..	4s	– 1990	6.99
B+	Erie & Jersey	6s	– 1955	5.23
B+	B. F. Keith	6s	– 1946	6.95
B+	Appalachian Electric Power	5s	– 1956	5.24
B+	Childs	5s	– 1943	6.92
B+	Wabash Railway	5s	– 1976	5.26
B+	Armour (Delaware)	5½s	– 1943	6.73

ONE-RATING-HIGHER EXCHANGES:			Yield to Maturity
	A to A+		
A	New York Central	4s – 1998	4.60
A+	Chicago Union Station	6½s – 1963	5.65
A	Duquesne Light	4½s – 1967	4.64
A+	Liggett & Myers	7s – 1944	5.51
A	New York Gas, Electric Light, Heat & Power	5s – 1948	4.67
A+	Liggett & Myers	5s – 1951	5.15
A	New York Gas, Electric Light, Heat & Power	4s – 1949	4.67
A+	Illinois Central	4s – 1953	5.10
	A– to A		
A–	Public Service Electric & Gas	4½s – 1967	4.71
A	Carolina, Clinchfield & Ohio	6s – 1952	5.57
A–	Metropolitan Edison	4½s – 1968	4.75
A	Northern Pacific	6s – 2047	5.45
A–	Illinois Central	4¾s – 1966	4.83
A	Union Electric Light & Power (Illinois)	5½s – 1954	5.43
A–	Chicago & North Western	4½s – 2037	4.84
A	New York Edison	6½s – 1941	5.23
	B+ to A–		
B+	Wabash Railway	4½s – 1978	4.96
A–	P. Lorillard	7s – 1944	6.25
B+	Erie & Jersey	6s – 1955	5.23
A–	Brooklyn Union Elevated	5s – 1950	6.21
B+	Appalachian Electric Power	5s – 1956	5.24
A–	Ohio Public Service	7s – 1947	5.99
B+	Wabash Railway	5s – 1976	5.26
A–	Firestone Cotton Mills	5s – 1948	5.90

				Yield to Maturity
ONE-RATING-HIGHER EXCHANGES:				
		B to B+		
B	Erie	5s	– 1967	5.42
B+	Mahattan Railway of New York..	4s	– 1990	6.99
B	Chicago, Milwaukee, St. Paul & Pacific	5s	– 1975	5.61
B+	B. F. Keith	6s	– 1946	6.95
B	Denver & Rio Grande Western....	5s	– 1978	5.72
B+	Childs	5s	– 1943	6.92
B	Nebraska Power	6s	– 2022	5.76
B+	Armour (Delaware)	5½s	– 1943	6.73
TWO-RATINGS-HIGHER EXCHANGES:				
		A– to A+		
A–	Public Service Electric & Gas	4½s	– 1967	4.71
A+	Chicago Union Station	6½s	– 1963	5.65
A–	Metropolitan Edison	4½s	– 1968	4.75
A+	Liggett & Myers	7s	– 1944	5.51
A–	Illinois Central	4¾s	– 1966	4.83
A+	Liggett & Myers	5s	– 1951	5.15
A–	Chicago & North Western	4½s	– 2037	4.84
A+	Illinois Central	4s	– 1953	5.10
		B+ to A		
B+	Wabash Railway	4½s	– 1978	4.96
A	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
B+	Erie & Jersey	6s	– 1955	5.23
A	Northern Pacific	6s	– 2047	5.45
B+	Appalachian Electric Power	5s	– 1956	5.24
A	Union Electric Light & Power (Illinois)	5½s	– 1954	5.43
		B to A–		
B	Erie	5s	– 1967	5.42
A–	P. Lorillard	7s	– 1944	6.25
B	Chicago, Milwaukee, St. Paul & Pacific	5s	– 1975	5.61
A–	Brooklyn Union Elevated 1st	5s	– 1950	6.21
B	Denver & Rio Grande Western	5s	– 1978	5.72
A–	Ohio Public Service	7s	– 1947	5.99
B	Nebraska Power	6s	– 2022	5.76
A–	Firestone Cotton Mills	5s	– 1948	5.90

				Yield to Maturity
Two-Ratings-Higher Exchanges:				
		B− to B+		
B−	Pacific Investing	5s	– 1948	5.66
B+	Manhattan Railway of New York..	4s	– 1990	6.99
B−	Pittsburgh Coal	6s	– 1949	6.08
B+	B. F. Keith	6s	– 1946	6.95
B−	Standard Power & Light	6s	– 1957	6.21
B+	Childs	5s	– 1943	6.92
B−	National Public Service	5s	– 1978	6.27
B+	Armour (Delaware)	5½s	– 1943	6.73
Three-Ratings-Higher Exchanges:				
		B+ to A+		
B+	Wabash Railway	4½s	– 1978	4.96
A+	Chicago Union Station	6½s	– 1963	5.65
B+	Erie & Jersey	6s	– 1955	5.23
A+	Liggett & Myers	7s	– 1944	5.51
		B to A		
B	Erie	5s	– 1967	5.42
A	Carolina, Clinchfield & Ohio	6s	– 1952	5.57
		B− to A−		
B−	Pacific Investing	5s	– 1948	5.66
A−	P. Lorillard	7s	– 1944	6.25
B−	Pittsburgh Coal	6s	– 1949	6.08
A−	Brooklyn Union Elevated 1st	5s	– 1950	6.21
		C+ to B+		
C+	Denver & Rio Grande Western....	5s	– 1955	5.29
B+	Manhattan Railway of New York..	4s	– 1990	6.99
Six-Ratings-Higher Exchange:				
		C+ to A+		
C+	Denver & Rio Grande Western....	5s	– 1955	5.29
A+	Chicago Union Station	6½s	– 1963	5.65

APPENDIX F

Investing in Yields by Moody Ratings

Average Returns of Exchanges by Specific Steps*

	By 1930		By 1932		By 1934		By 1935	
	Sold	Bought	Sold	Bought	Sold	Bought	Sold	Bought
Equal-Rating Exchanges:								
A+	7.6	8.2	3.7	3.8	33.4	32.5	41.5	38.1
A	9.0	5.5	−29.4	−16.5	10.7	0.9	20.9	7.8
A−	8.7	−1.6	−13.5	1.7	20.6	32.5	31.1	37.0
B+	9.4	−6.0	−41.5	−37.0	18.4	0.8	19.7	6.0
One-Rating-Higher Exchanges:								
A to A+	9.0	8.2	−29.4	3.8	10.7	32.5	20.9	38.1
A− to A	8.7	5.5	−13.5	−16.5	20.6	0.9	31.1	7.8
B+ to A−	9.4	−1.6	−41.5	1.7	18.4	32.5	19.7	37.0
B to B+	5.7	−6.0	−41.2	−37.0	−0.6	−0.8	−0.9	6.0
Two-Ratings-Higher Exchanges:								
A− to A+	8.7	8.2	−13.5	3.8	20.6	32.5	31.1	38.1
B+ to A	9.4	5.5	−41.5	−16.5	18.4	0.9	19.7	7.8
B to A−	5.7	−1.6	−41.2	1.7	−0.6	32.5	0.9	37.0
B− to B+	−10.6	10.6	−68.4	−4.6	−66.9	61.3	−59.0	93.5
Three-Ratings-Higher Exchanges:								
B+ to A+	10.8	8.3	−34.1	−0.5	22.6	32.8	26.4	39.1
B to A	2.0	1.6	−75.2	−43.2	−54.9	−88.5	−68.2	−73.3
Five-Ratings-Higher Exchange:								
B to A+	2.0	7.3	−75.2	10.6	−54.9	28.1	−68.2	30.6

* Exchanges on July 12, 1929. Accountings on July 14, 1930; July 18, 1932; July 16, 1934; July 15, 1935.

INVESTING IN YIELDS BY PESSIMISTIC RATINGS

Average Returns of Exchanges by Specific Steps *

	By 1930		By 1932		By 1934		By 1935	
	Sold	Bought	Sold	Bought	Sold	Bought	Sold	Bought
EQUAL-RATING EXCHANGES:								
A+	7.6	10.0	3.7	−1.1	33.4	31.2	41.5	35.5
A	8.3	7.5	7.1	−6.9	32.4	27.8	38.9	29.8
A−	8.4	6.2	−29.5	0.8	5.8	38.9	27.9	53.6
B+	8.3	−2.0	−44.8	−37.1	−17.4	13.1	−14.8	34.4
ONE-RATING-HIGHER EXCHANGES:								
A to A+	8.3	10.0	7.1	−1.1	32.4	31.2	38.9	35.5
A− to A	8.4	7.5	−29.5	−6.9	5.8	27.8	27.9	29.8
B+ to A−	8.3	6.2	−44.8	0.8	−17.4	38.9	−14.8	53.6
B to B+	7.5	−2.0	−48.6	−37.1	−7.6	5.5	−13.8	34.4
TWO-RATINGS-HIGHER EXCHANGES:								
A− to A+	8.4	10.0	−29.5	1.1	5.8	31.2	27.9	35.5
B+ to A	9.3	7.4	−33.1	−14.9	−1.8	26.5	3.2	28.1
B to A−	7.5	6.2	−48.6	0.8	−7.6	38.9	13.8	53.6
B− to B+	2.4	−2.0	−34.5	−37.1	−8.7	13.1	−3.0	34.4
THREE-RATINGS-HIGHER EXCHANGES:								
B+ to A+	9.3	9.2	−48.7	15.1	−17.3	34.9	15.0	41.0
B to A	5.0	6.6	−63.7	−31.8	5.6	28.5	−0.5	35.3
B− to A−	0.2	6.9	−13.1	7.5	24.6	44.2	38.6	59.9
C+ to B+	2.0	−11.1	−75.2	−23.0	−54.9	14.5	−68.2	38.7
SIX-RATINGS-HIGHER EXCHANGE:								
C+ to A+	2.0	7.3	−75.2	10.6	−54.9	28.1	−68.2	30.6

* Exchanges on July 15, 1929. Accountings on July 14, 1930; July 18, 1932; July 16, 1934 July 15, 1935.

APPENDIX G

Investing in Yields by Moody Ratings

Average Returns of Exchanges by General Types of Exchanges *

	By 1930		By 1932		By 1934		By 1935	
	Sold	Bought	Sold	Bought	Sold	Bought	Sold	Bought
Equal-Rating Exchanges.....	8.7	1.5	−20.2	−12.0	20.8	16.7	28.3	22.2
One-Rating-Higher Exchanges...	8.2	1.5	−31.4	−12.0	12.2	16.3	17.7	22.2
Two-Ratings-Higher Exchanges..	6.5	4.5	−34.8	−3.7	6.6	25.0	10.8	32.7
Three-Ratings-Higher Exchanges.	8.6	6.6	−44.4	−11.2	3.2	2.5	2.8	11.0
Five-Ratings-Higher Exchange...	2.0	7.3	−75.2	10.6	−54.9	28.1	−68.2	30.6

Investing in Yields by Pessimistic Ratings

	By 1930		By 1932		By 1934		By 1935	
	Sold	Bought	Sold	Bought	Sold	Bought	Sold	Bought
Equal-Rating Exchanges.....	8.2	5.4	−15.9	−11.1	13.5	27.7	23.4	38.3
One-Rating-Higher Exchanges...	8.1	5.4	−28.9	−11.1	2.9	27.1	9.5	38.3
Two-Ratings-Higher Exchanges..	6.7	5.3	−36.6	−12.9	−3.2	27.5	3.6	38.5
Three-Ratings-Higher Exchanges.	4.3	4.9	−43.7	−1.6	−5.8	33.5	−3.2	46.0
Six-Ratings-Higher Exchange....	2.0	7.3	−75.2	10.6	−54.9	28.1	−68.2	30.6

* Exchanges on July 15, 1929. Accountings on July 14, 1930; July 18, 1932; July 16, 1934; July 15, 1935.

APPENDIX H

Much information as to the organization of rating agencies, their history, the attitudes of various types of institutions and individuals toward the rating system, and the extent to which bond ratings are used, was obtained, either in personal interviews or by correspondence, from the following officials.

FROM THE RATING AGENCIES:

Louis Brand, Manager of the Rating Department, Standard Statistics Co., Inc.
Walter B. Brown, Manager of the Rating Department, Moody's Investors Service.
Henry P. Clancy, Editorial Vice President, The Fitch Publishing Co.
Dominic Di Palma, Manager of the Bond Department, Standard Statistics Co., Inc.
Lester Drew, Eastern Sales Promotion Manager, Poor's Publishing Co.
H. G. Fowler, Assistant to the Vice President, Moody's Investors Service.
Adam Gostomski, Economist, Moody's Investors Service.
John Moody, President, Moody's Investors Service.
Erling C. Olsen, Executive Vice President, The Fitch Publishing Co.
Freeman Putney, Jr., Vice President, Poor's Publishing Co.
E. J. Reilly, until recently Trust Counsel, Moody's Investors Service, and Associate Editor, *Trust Companies.*
Laurence H. Sloan, Vice President and Managing Editor, Standard Statistics Co., Inc.
Gérard Tonachel, Treasurer, Poor's Publishing Co.
C. Royal Young, Quotation Editor, The Fitch Publishing Co.

AMONG THE STATE GOVERNMENTS:

Alfonso Aguilar, Superintendent of Insurance, State of New Mexico.
James G. Angell, Chief Examiner, Insurance Department, State of Rhode Island.
Latimer W. Ballou, Bank Commissioner, State of Rhode Island.
W. J. Barnett, Bank Commissioner, State of Oklahoma.

Edward J. Barrett, Auditor of Public Accounts, State of Illinois.
Claude C. Beals, Chief Examiner, Division of Insurance, State of Ohio.
M. C. Bennett, Chief Examiner, Securities Division, State of Georgia.
Dan C. Boney, Insurance Commissioner, State of North Carolina.
George A. Bowles, Superintendent of Insurance, State of Virginia.
J. S. Brock, State Bank Commissioner, State of Louisiana.
Garfield W. Brown, Commissioner of Insurance, State of Minnesota.
Philip H. Cless, First Deputy Commissioner of Insurance, State of Iowa.
Jackson Cochrane, Commissioner of Insurance, State of Colorado.
George Compton, Acting Deputy Commissioner, Department of Banking and Insurance, State of New Jersey.
Thomas H. Daniel, Chief Bank Examiner, Board of Bank Control, State of South Carolina.
H. B. Dowdell, Deputy Superintendent of Banks, State of South Dakota.
George W. Egbert, Deputy Superintendent of Banks, State of New York.
I. J. Fulton, Superintendent of Banking, State of Ohio.
John J. Ghingher, Bank Commissioner, State of Maryland.
R. E. Gormley, Superintendent of Banks, State of Georgia.
Charles C. Greer, Superintendent of Insurance, State of Alabama.
R. A. Haigh, Bond Division, Department of Banking, State of Michigan.
J. W. Hatley, Assistant Commissioner of Insurance, State of Arkansas.
Lee Herdman, Director of Insurance, State of Nebraska.
George M. Hewes, Security Division, Insurance Commission, State of Connecticut.
H. C. Higdon, Actuary, Insurance Department, State of Kansas.
John J. Holmes, State Auditor and Insurance Commissioner, State of Montana.
Harold W. Horsey, State Bank Commissioner, State of Delaware.
Edward J. Hughes, Secretary of State, State of Illinois.
Frank H. Johnson, Superintendent of Banks, State of Montana.
J. Elmer Johnson, Director of Securities, Corporation Commission, State of Arizona.
A. C. King, First Deputy Superintendent of Banking, State of Ohio.
Sam B. King, Insurance Commissioner, State of South Carolina.
W. V. Knott, State Treasurer and Insurance Commissioner, State of Florida.

H. W. Koeneke, Bank Commissioner, State of Kansas.
L. W. Leland, Deputy Commissioner of Banks, State of Massachusetts.
J. S. Love, Superintendent of Banks, State of Mississippi.
R. J. Maertz, Manager of the Bond Department, Division of Banking, State of Minnesota.
J. A. Mana, Bank Commissioner, State of Utah.
Grant McFerson, State Bank Commissioner, State of Colorado.
L. Douglas Meredith, Commissioner of Banking and Insurance, State of Vermont.
M. R. Prenner, Actuary, Department of Insurance, State of North Dakota.
Blake S. Raplee, Assistant Superintendent of Banks, State of Ohio.
Tom Scanlan, Deputy Commissioner of Insurance, State of South Dakota
S. N. Schafer, Bank Commissioner, State of Wisconsin.
A. A. Schramm, Superintendent of Banks, State of Oregon.
F. P. Singer, Jr., Securities Division, Insurance Department, State of Missouri.
Wilbur D. Spencer, Commissioner of Insurance, State of Maine.
John E. Sullivan, Insurance Commissioner, State of New Hampshire.
George S. Van Schaick, Superintendent of Insurance, State of New York.
William C. Walsh, Insurance Commissioner, State of Maryland.
George Ward, Commissioner of Banking, State of West Virginia.
J. H. Williams, Superintendent of Banks, State of Alabama.

AMONG THE BANKS:

American Trust & Banking Co., Chattanooga, Tennessee.
The City National Bank & Trust Co., Columbus, Ohio.
Commercial Merchants National Bank & Trust Co., Peoria, Illinois.
Federal Reserve Bank of Atlanta.
Federal Reserve Bank of Boston.
Federal Reserve Bank of Cleveland.
Federal Reserve Bank of Minneapolis.
Federal Reserve Bank of New York.
Federal Reserve Bank of Richmond.
Federal Reserve Bank of San Francisco.
Fidelity Union Trust Co., Newark, New Jersey.
The First National Bank, Great Falls, Montana.
The Louisville Trust Co., Louisville, Kentucky.
Northwest Bancorporation, Minneapolis, Minnesota.
The Washara County Bank of Plainfield, Plainfield, Wisconsin.

AMONG THE INSURANCE COMPANIES:

H. B. Arnold, President, Midland Mutual Life Insurance Co.
Robert A. Barbour, President, Berkshire Mutual Fire Insurance Co.
W. C. Cartinhour, Vice President and Secretary, The Provident Life & Accident Insurance Co.
Frederic W. Ecker, Treasurer, Metropolitan Life Insurance Co.
Harry C. Fetsch, Actuary, Ohio State Life Insurance Co.
William C. Gordon, Jr., Bond Division, General American Life Insurance Co.
Sewell W. Hodge, Treasurer, Provident Mutual Life Insurance Co. of Philadelphia.
Corliss W. Parry, Associate Economist, Metropolitan Life Insurance Co.
V. J. Schmitz, Bond Department, Dubuque Fire & Marine Insurance Co.
F. J. Travers, Financial Secretary, the Lincoln National Life Insurance Co.

FROM OTHER ORGANIZATIONS:

F. G. Awalt, Deputy Comptroller of the Currency.
C. B. Axford, Editor of the *American Banker.*
Sherwin C. Badger, Editor of *Barron's.*
Hector R. Ball, Superintendent of Insurance, Government of Puerto Rico.
George D. Bushnell, Investment Counsellor, Chicago.
Howard W. Clark, Editor of the *Mid-Western Banker.*
R. H. Collier, Chief National Bank Examiner of the Eleventh Federal Reserve District.
Charles A. Dice, Professor of Banking, The Ohio State University.
Joshua D'Esposito, Jr., Analyst, Bondex, Inc., Chicago.
R. E. Edwards, President, Bondex, Inc., Chicago.
G. D. Finlayson, Superintendent of Insurance, Dominion of Canada.
John R. Fletcher, Secretary, National Quotation Bureau, Inc., New York City.
Charles W. Gerstenberg, Professor of Law, St. Lawrence University, and Chairman of the Board of Directors, Prentice-Hall, Inc.
E. A. Goldenweiser, Director of Research, Federal Reserve Board.
William R. Kuhns, Managing Editor of *Banking,* American Bankers Association.
James M. Landis, Chairman of the Securities and Exchange Commission.

Gibbs Lyon, Deputy Comptroller of the Currency.
F. Lee Major, President of the Missouri Bankers Association.
D. W. Matthews, Treasurer, Bondex, Inc., Chicago.
P. J. McNurlen, Chief Analyst, Pfaff & Hughel, Inc., bond house, Indianapolis.
Philip Meyer, Bond Trader, G. M-P. Murphy & Co., New York City.
John G. Nichols, Chief of the Examining Division, Federal Deposit Insurance Corporation.
Samuel O. Rice, Educational Director, Investment Bankers Association of America.
Société d' Éditions Économiques et Financières, Paris.
G. W. Terborgh, until recently Research Associate, Federal Reserve Board, now Research Associate, The Brookings Institution.
H. F. Thierman, Sales Manager, Bancohio Securities Co., Columbus.
C. S. Tompkins, Inspector-General of Banks, Dominion of Canada.
Rose Vormelker, Librarian, Business Department, Cleveland Public Library.
Irwin D. Wright, Chief National Bank Examiner of the Tenth Federal Reserve District.

INDEX